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ON PAGE 017

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photography by John Roe

Car and Driver. vol. 62, no. 3

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"State Route 33 is best at dusk, right as the sun has its last dance with the canyons."

—TONY QUIROGA, "ATTACK OF THE CLONES"

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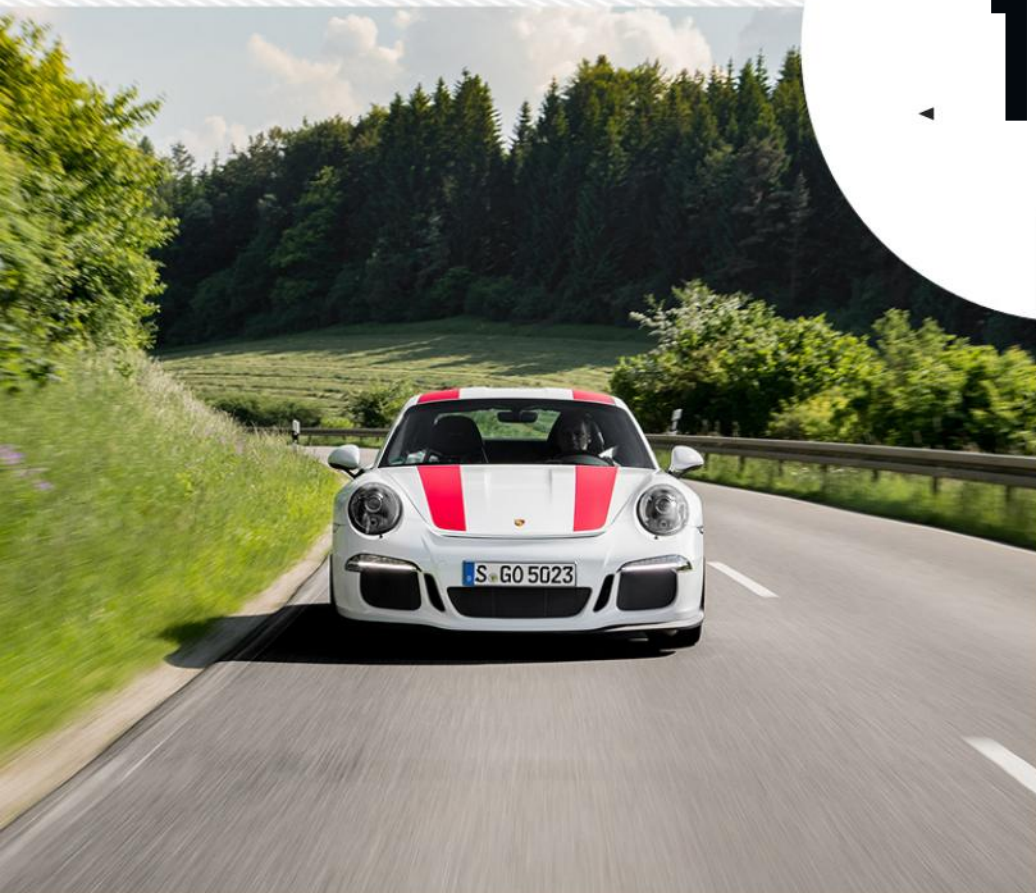
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Backfires:

I am writing you a long letter because I don't have time to write you a shorter one.

—Blaise Pascal

THE AIR UP THERE

There is one quality of a turbocharged engine you didn't mention that influenced the car my wife and I recently bought ["To Blow or Not to Blow?" June 2016]. I had a Subaru WRX and found that there was no discernible power loss at high altitude. We regularly travel between Texas and New Mexico. I can always feel the difference with a naturally aspirated engine. So when my wife was in the market for an SUV, we went with a turbocharged engine, knowing that it would still be strong at 7000 feet.

—Richard Wheelus
Austin, TX

To sum up your naturally-aspirated-versus-turbo showdown:

1. Observed mpg: no difference in the match-ups

2. Three-quarters of the wins went to the naturally aspirated vehicle

Remind me again why automakers are moving to more-complicated engines that don't sound as good, have to spool up for power, and don't deliver meaningful mpg differences.

—Owen Berg
Forest Lake, MN

Could it be that you car guys use more turbo boost for testing and fun than we might in everyday driving? It stands to reason that if you stay off the turbo, a smaller four should be more efficient than a V-6 with similar horsepower, while if you drive with a "heavy foot," fuel consumption could be about equal. This question is important when deciding what type of engine to buy. A turbo might be like having two engines, one for economy and another for performance when needed.

—Bill Altemeier
San Antonio, TX

We exclude track testing from our observed fuel-economy calculations—Ed.



“REMIND ME AGAIN WHY AUTOMAKERS ARE MOVING TO MORE-COMPLICATED ENGINES THAT DON'T SOUND AS GOOD, HAVE TO SPOOL UP FOR POWER, AND DON'T DELIVER MEANINGFUL MPG DIFFERENCES.”

Your article on turbos effectively answers the two main questions: whether turbo engines save gas and if lag has been vanquished. I remember when ads for rebuilt turbochargers were all over the place. How has the design of the current crop of turbochargers changed? What, specifically, makes them more reliable? (Design, materials, lubricants?) I saw the EcoBoost 2.3 at last year's auto show and was amazed by how small the turbo-charger is. I can't help but wonder: Should I buy a turbo engine, and what would the cost be to replace the turbo should it fail out of warranty?

—Jim Kurz
Arnold, MO

See “Explained,” next page—Ed.

X FACTOR

Your article on the Tesla Model X ["Not Just Winging it," June 2016] told me everything I wanted to know about this vehicle except for one crucial item: How long will it take to fully recharge the battery? I imagine that the amount of time spent waiting for the Falcon Wing doors to close is nothing compared with waiting for the lithium-ion battery to recharge (so I can get back on the highway).

—Skip Bolton
Monroe, MI

An 80-percent charge can be done in 30 minutes on a Tesla Supercharger; a full charge takes about 8 hours with a 240-volt, 48-amp circuit; and it can take 30 hours or more on a 120-volt outlet—Ed.

Why are the doors "silly"? Who says? Quirky, perhaps, but they look pretty damn cool to me. Nobody ever said a Mercedes Gullwing looks silly.

—DS

San Diego, CA

Consider this: A Ninja Turtle costume is fine for a child, but you're going to look silly in one, DS—Ed.

If Tesla works like PayPal, I shall never pass through the overengineered hinged portals of the Model X.

—Tom Arnold
Portland, OR

REV MATCH

From "Heavy Breathers," June 2016: "Its 4.0-liter flat-six inhales exactly what a planet with an iron core big enough to give compressive weight to ethereal gas molecules can give it."

Whatever you pay Robinson, it isn't enough. This is about as perfect a paean to the naturally aspirated engine as I've ever read.

—George Oross
Queens, NY

I have no dogs in this fight: I own a Lamborghini Diablo and a Lotus Esprit. The main attractions of a sports car are its drivability at high speed and its attractive design. In this case, the McLaren creams the Porsche on both. Strangely, C/D picks the Porsche because it "reminds us of sunsets over Sebring." Have you lost your minds entirely? I am accustomed to reading that C/D picks the 911 over any car, despite it being outclassed consistently, but this is a new record of stupidity. Try this test: Park a 911 next to any real sports car (Ferrari, Lamborghini, McLaren, etc.) and nobody will even notice its presence.

—Jacques Lahaie
Alpharetta, GA

Great suggestion. Now we'll just have to figure out how to measure drool—Ed.

CONDIMENTS

Comparing mustard to ketchup is dumb ["Mean Mr. Mustard," June 2016]. What

happened to apples to apples or V-6 to V-6? I drove all the engines in both cars and declared the Chevy Camaro V-6 with the eight-speed auto the best driver, but I wanted a manual and the Ford Mustang's clutch and stick were better. There are also many ins and outs to consider. Like, do you want to get in and out of your car easily and while in, do you want to see out easily and do you want to be able to back out of a tight parking spot? If so, you need the Mustang. The Ford V-6 is almost as good as the Chevy, sounds better than either turbo four, and will cost less to maintain. My 2016 V-6 six-speed manual is certainly not a rental car, and before you assume I am just another Ford fan, I am more of a BMW fan and buyer. The fit and finish is very comparable. The driving feel is only close but who cares, I only paid \$21,000 for my beauty. So there.

—John Oglesby
Miramar Beach, FL

FORD ON FORD

In regards to the comment "... just in case UV saturation affects weight" ["Tow to Tow," June 2016]: I can attest that this is absolutely true. Case in point: Every time I go to the beach and take off my shirt, I look and feel fatter. I have always wondered if it was the UV light that was putting those extra pounds on me, not the cheeseburgers. I just keep my shirt on now. Thanks for the insight.

—Cord Guthrie
Prairie Grove, AR

Why would you not think that the EcoBoost V-6 is the hands-down winner? It has more torque. Who needs the V-8 when you have piped-in sound? I have owned two Ford F-150s, each with the EcoBoost V-6. It's by far the better engine.

—Doug Pendery
Loveland, OH

Preferring piped-in sound is just a few steps away from becoming a Real Doll enthusiast—Ed.

Explained: Turbo reliability

Early turbochargers were typically air or oil cooled, and high temperatures often caused the oil to coke and harden, impeding lubrication and causing bearing failure. Today's gas-engine turbos are universally water cooled to better manage temperatures, and modern oils better resist coking. Cooling circuits also use the thermal siphoning effect (or, on some cars, an electric pump) to keep water flowing past the turbocharger bearing housing after the engine has been shut down, preventing extreme heat soak.

Equally important are the advances that have come with the rise of computer-aided engineering. "The designs and the geometries we have go through several iterations before we tool anything. They are inherently more reliable before we ever do the first test," says Gavin Donkin, VP of product development at Honeywell Turbocharger Technologies.

Freight-truck manufacturers now expect more than a million miles from a turbo. In a car, the blower might not last that long, but it should outlast the engine. In the event of a failure, a turbo replacement costs between \$500 and \$1,000, not including labor.

—Eric Tingwall

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FOUR PLAY

The line in your June issue ["Public Transportation"] saying that the VW Golf's throttle response "has all the urgency of Wolfsburg answering its mail from the EPA" was one of the funniest things I've ever read. Thank you and keep up the great work.

—Mark Treiber
Lake Tahoe, CA

RING TOSS

Regarding the Audi A4's road test ["Quiet, Please," June 2016]: So, lemme get this straight; quiet competence is what makes a \$30,000 Toyota Camry such a ho-hum driving appliance, but in a \$54,000 A4 it's wonderful? Okay then, C/D, whatever you say.

—Nozaman
Madison, WI

We never said the Camry was quietly competent, but we'll agree with you that it is always ho-hum. The A4 might have a quiet side, but it can also be fun—Ed.

YELLOW, IT'S ME

Regarding the long-term test of the Mini Cooper S ["Making Lemonade," June

2016]: The irony of needing a Heli-Coil repair should not be lost; essentially everything designed to stay together in this car did not, and what was designed to come apart would not.

—James Champion
New York, NY

Finally, a worthy successor to the Opel-in-a-junkyard article. Congratulations! What took you 48 years?

—David Mount
Waxhaw, NC

Current lease on my wife's car—a 2014 Honda Accord Sport—is nearly up. The Mini Clubman was at the top of our replacement list but, after reading "Making Lemonade," it has been removed. Are you listening, BMW? Get this shit right.

—Albert Lassen
Tucson, AZ

Kudos to Eric Tingwall for calling out the Mini.

—Steve Laird
Flower Mound, TX

XTRA, XTRA

Please follow up on the promised Cadillac XT5 comparo with its German counterparts [Drivelines, June

"QUIET COMPETENCE IS WHAT MAKES A \$30,000 TOYOTA CAMRY SUCH A HO-HUM DRIVING APPLIANCE, BUT IN A \$54,000 AUDI A4 IT'S WONDERFUL?"



Editor's Letter:

Much ink has been spilled concerning the death of the sedan, and more will be spilled here. The latest sales numbers augur poorly for the humble three-box form. According to the charts, the mid-size car used to represent 16 percent of the light-vehicle market. As of the first part of 2016, that share is down to about 13 percent.

Meanwhile, the small SUV has picked up the slack, growing from 10 percent of the market to 14 percent over the same period. The reported causes seem pretty obvious. Historically low gas prices are back, but the retrograde notion that all SUVs drive and perform like trucks is fading. Also pushing the shift: Higher ride heights give drivers more confidence on the road; bigger vehicles offer more storage space and a greater feeling of safety; and more-efficient powertrains have reduced the mpg delta between cars and SUVs, even if gas prices aren't the overwhelming consideration they were three years ago.

There's something else at play, though. The nascent aspect of the crossover gives designers more leeway to experiment. The mini-crossover segment, for example, is a riot of forms and styles and expressions of brand cues. The Jeep Renegade has little in common stylistically with the Honda HR-V, lashed together in the same segment. They are for different people.

Conversely, the Chevrolet Cruze, handsome as it is, looks conventionally similar to the equally handsome Hyundai Elantra. They're all the same loaves of bread. And it's hardly better in the mid-size-sedan class.

The competition has been so fierce in sedan segments as to make all regress toward the mean—similar interior options, similar performance, similar trunk space, similarly sober styles. The last big innovation in mid-size sedans was the "coupe-like" roof of the 2011 Hyundai Sonata. Now most mid-sizers have extended rooflines.

The sedan may be benchmarking itself out of existence. Add in the social aspect—i.e., the sedan is the car your dad drove—and the call of the crossover seems seductive. But the benefits of the sedan are many, and many of them are dynamic. As we go out into 2017, let's evangelize the sedan to our car-shopping friends and family. And let's argue, with our wallets, for four-doors that try harder. Let's not let the sedan be the new minivan.

—Eddie Alterman



2016]. I could actually see this as my first Caddy acquisition, depending, of course, on your analysis.

—Kerry Schumacher
Columbia, MO

Tell me about your mother—Ed.

TRIDENT POKE

I enjoyed reading about the Maserati Levante in the June issue. Do you know why Maserati insists on keeping that Burger King emblem in the grille? Just wondering.

—Barry Campbell
Luther, MI

Because there's a Whopper right behind it—Ed.

WIRED UP

I read about the harness in the Bentley Bentayga ["Zap Zone," June 2016]. I thought there might have been something about the number of fuses in the Bentley. My present car has about 90. My Mini of some 50 years ago had TWO.

—Michael Hewes
Chelsea, QC

And a 50-percent failure rate?—Ed.

SUE EVERYBODY

I chortled at Jared Gall's account of the Nader museum ["Pop Tort," June 2016]. You have to give Nader partial credit for greater safety emphasis in cars, although he was unfairly selective in his targets (why the Chevy Corvair and not the Volkswagen?). He's managed to trade on that one accomplishment, having done little else of note except make spoiler runs for the presidency for the past 50-plus years.

—Marshall Anderson
Corpus Christi, TX

SIGN UP

I'm a new subscriber to C/D. Just wanted to let you know I enjoyed the article by John Phillips regarding road signs with dubious, obscure, confusing, or humorous meanings ["Sign Language," June 2016]. Here's one I see frequently in my home state of Missouri: "IMPASSABLE DURING HIGH WATER." I have a question. Aren't all



"THE MINI CLUBMAN WAS AT THE TOP OF OUR REPLACEMENT LIST, BUT AFTER READING 'MAKING LEMONADE,' IT HAS BEEN REMOVED."

roads impassable during high water?

—Bob Blumenshine
Osage Beach, MO

I agree with Phillips. I remember a sign that read "SPEED RADAR CONTROLLED" in Natick, Massachusetts. Really? I don't remember checking the "radar sensor to allow the man to control the speed of your car via radar waves" box on the options list. And many times I've seen "BLIND DRIVE." No, they don't.

—Brian Degon
North Attleboro, MA

John, another sign to add to your list is one that has always baffled me. The sign reads: FOG AREA or FOG ZONE. My thoughts? If it's foggy, I don't need a sign to tell me I am in a fog area. In fact, if it's bad enough I probably won't even be able to read the sign anyway.

—Jay Gravelyn
Grand Rapids, MI

Phillips's June column on thought-provoking, mind-twisting signs hit the spot. Here, in western Washington, a couple of signs stand out. On I-5 just north of Woodland, the WSDOT erected a large sign alerting tired drivers to "DIKE ACCESS ROAD," one I have made a point to avoid. Then there's Lakewood, near Tacoma, with signs on a quiet road close to millionaire-studded Gravelly Lake Drive, warning of bumps placed at intervals. Two words adorn the signs: "SPEED HUMP." I've regularly traveled that road. I'm not making this up.

—D. S. Holmes
South Hill, WA

So John Phillips has never seen a sign that read "FINE FOR LITTERING"?

—Bernie Spencer
Fort Thomas, KY

Phillips missed the greatest one of all, "WATCH FOR FALLING ROCKS." Oh, look out, we're about to get flattened by a 50-ton rock. Fallen I can buy, but falling does nothing!

—Stephen Goss
Moore, SC

Phillips, ever the wordsmith, nailed it with his "Sign Language" column. I'm a professional word nerd and share his amusement with road-sign syntax. Here's another grammar buster: "SLOW CHILDREN AT PLAY." Shouldn't these communities reallocate their signage budgets into their schools?

—John Dickerson
Silicon Valley, CA

Phillips's attempt at humor with the road signs was okay until he joked about the signs for kids. I take great offense to a

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columnist making fun of signs that are there to keep kids safe. My granddaughter is autistic and is classed as a runner, which means she can dart away at any time without thinking about her own safety. Hopefully these signs will make drivers more cautious in these posted areas. Making fun of this is in extremely bad taste.

—Mark Stevens
Sarnia, ON

I'm quietly reading my June issue until I get to Phillips's column, "Sign Language." My wife comes by as I'm chuckling and wants to know what's funny. So I try to read her a few lines, but when I get to "LANE DROP AHEAD" I lose it. Tears stream down my face as I choke with laughter. Finally she grabs the magazine to read it herself. I can't get the mag back! And please keep Phillips employed for as long

as he can avoid institutionalization.

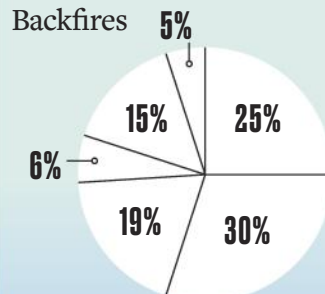
—Alan Tracy
Arlington, VA

FIRING SQUAD

I was excited to read your June 2016 issue. As I read your Backfires comments I stumbled upon an openly honest letter. The gentleman references an article titled "Farewell My Lovely" in which he talks about how his wife was taken care of by a Saturn dealership. You could tell he loved the Saturn reputation for customer service, showing just how much they cared what the customers thought of them. However, the comment from "Ed." was just sad at best. Taking a jab at the man's expense was not only uncalled for but also just plain cowardly. Unfortunately that's the last issue I will ever read; absolute garbage.

—Chris Marr
Hacienda Heights, CA

Letter of the Month:



25% Questions about articles
30% Rants about those same articles
19% Canadians
15% Attention seekers
6% Ed.
5% Melanie

—Michael Gordon
Internetland

Hi, Ed., the Backfires section is worth the price of the mag on its own. The rest is icing on the cake.

—Dan Marois
Gatineau, QC

After reading the Backfires section of the June 2016 issue, I think Melanie Barnett is trying to apply to be C/D's next writer. I can think of no other reason for her letters, which were nothing less than reviews of the Ford Focus RS

and Lexus LC500. I wasn't aware we could apply in this manner! Prepare your inbox to be inundated with amateur reviews of everything from the 1937 Graham Page a local dealer has for sale near my house to the long-sought-after Mercury Grand Marquis de Sade. I'm so excited by this possibility of new employment that I just can't hide it!

—Michael DiPaolo
North Fort Myers, FL

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20 QUESTIONS FOR 2017

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1) WHAT'S UP?

□ CALLING THIS OUR “NEW CARS ISSUE” is a little redundant. Every month, *Car and Driver* is a new cars issue. We rarely write about anything else. We exist to celebrate the best, to expose the worst, and to keep our readers apprised of where the car market stands.

The auto industry is regularly assailed for being an elephantine lump that stubbornly resists the changes the world demands of it. But to cast it as such is to greatly underestimate what this enormous establishment is and does. Tech companies make gadgets. Clothiers define fashion. Home-security providers peddle protection. The automotive industry does all that. It's a vast and necessary interweaving of physics, aesthetics, engineering, chemistry, computer programming, and psychology, plus economics, a touch of black magic, and a dose of good luck. Sure, the product cycles are longer than in, say, the smartphone business. Apple may introduce a new iPhone every couple of years, but a carmaker must package its prodigious tech as unobtrusively as possible into a sturdy, safe shell that can hurtle down the highway at 100 mph, propelled by an engine governed by strict emissions regulations and producing ever more power, often from less displacement. There is plenty of change happening, both through slow evolution and via startling revolution, in performance, efficiency, safety, style, and transportation models. The auto business only seems to move slowly if you're not paying attention.

But the cars themselves are only half of the equation. Cars need buyers, and they're finding them in record numbers. America absorbed more new light vehicles in 2015—some 17.5 million—than ever before. In 2009, the U.S. bottomed out at 10.4 million sales. If 2016 meets expectations, sales will surpass 18 million, a stupefying 73-percent increase in just seven years. And the experts predict the trend to continue. GM's chief economist since 1995, Mustafa Mohatarem, is even more optimistic than most, believing that the market will continue to grow with the United States' population and could reach 20 million units in the next few years before retreating.

It's not just the sales and mobility options that are more numerous than ever, but the diversity of segments, models, and propulsion choices, too. Land Rover makes a convertible crossover now. Gasoline, the fuel of ubiquity not long ago, has given way to diesel, hybrids (plug-in or not), full electrics, and maybe even hydrogen if you meet the criteria for leasing or buying a fuel-cell vehicle. It's a baffling time to be in the market, but also a great one—have you noticed that more manufacturers now offer 500-plus-hp rocket ships than don't? And yeah, it appears as though hybrids and EVs are here to stay. We guess that's not all bad, either.



2) What big trickle-down feature should I look for on my next car?

Rearview cameras. In fact, 2017 will be your last chance to buy a new car without one, as they'll be required on all light vehicles sold in the U.S. starting in 2018. They are already offered on more than 90 percent of new cars.

3) SHOULD I JUST GIVE UP AND BUY A CROSSOVER?

No. But if you have to, here are five of the most acceptable:



▲ AUDI Q7



▲ JAGUAR F-PACE



▲ MAZDA CX-3



▲ MAZDA CX-9



▲ PORSCHE MACAN



4) CAN ANYTHING STOP THIS SALES BOOM?

Of all the factors driving vehicle sales, the two biggest are obvious: cheap money and cheap gas. But low interest rates also have led to the rise of subprime auto loans. People with lousy credit will pay high interest rates to get even a junky used car, and finance companies such as Exeter Finance, GM Financial, and Santander Consumer now bundle those loans together into tradable securities. In a low-interest-rate environment, where U.S. Treasury bonds are stuck with returns under 2 percent, investors are hungry for bonds that pay practically any interest.

But subprime mortgage loans and their securitization bonds were key instruments in the 2008 housing collapse and resulting recession. And Bloomberg reported this spring that delinquencies on subprime auto loans had grown to 5.2 percent as of last February. As the market recognizes that risk, it's being baked into the price of the bonds. Almost one-fifth of auto debt is subprime, and while a collapse of the subprime auto-loan market wouldn't impact the general economy the way the real-estate bust did, it's likely to choke the car market.



MICHAEL SIMCOE TOOK OVER the top design post at General Motors in July. He is just the seventh man to serve in the role, succeeding the newly retired Ed Welburn. An Australian, Simcoe has worked for GM since 1983, when he began his career at Holden. He is no stranger to Detroit, having directed North American design from 2004 to 2011. Most recently, Simcoe was in charge of GM's studios in Korea, Australia, and India.

C/D: *The market is gaga for crossovers. What can designers do with these big boxes?*

MS: We're doing design whether it's a "box," as you say, an SUV, or what traditionally we understand as a passenger vehicle. We put as much involvement and engagement from a design perspective in any of those vehicles.

■ *Surveys indicate that consumers are having a hard time figuring out a lot of new features, especially electronics. Whose job is it to make the car easy to operate?*

□ It's a combination of the whole product-development cycle—not just design, but engineering as well. The whole organization is responsible. It's change, and there are a lot of features in cars. Are they of value? Are they easy to understand? Our job is to make them that way. We are making vehicles safer, we are making them deliver a lot more than some customers require, but we're also in the process of preparing the vehicle systems and the vehicles themselves for

a fast-changing world. It's a heady time as we move into autonomous vehicles and shared environment and shared control.

■ *How do you see all this affecting design?*

□ The alternatives that designers have to work with are going to grow because of new propulsion, new environments, new packaging, and new materials. It's exciting for us. Our job now is to create emotion through exterior appearance, interior appearance, quite a lot of user experience, the ergonomics, and the interfaces. For a shared vehicle in an autonomous environment, it might be a different sort of emotion that you're playing to, but still you have to engage customers. If you think about where we are moving, we're going to give designers the ability to reinvent the vehicle. In the next five years we're going to move further than we've moved in the last fifty. It's a huge change, but it's also an opportunity.

5) WHAT IS THE FUTURE OF CAR DESIGN?

6) ARE BUTTONS AND KNOBS GOING TO DISAPPEAR?

Their replacements are already here: "Touchscreen, gesture control, and capacitive touch all have a right of existence in a holistic experience," says Amko Leenarts, global director of interior design at Ford. But that doesn't mean redundant physical controls are going anywhere. Leenarts and other designers say that all these new ways of interfacing with the car, along with voice control, will co-exist with good old-fashioned buttons and knobs. Which we'll continue using, at least until cars get as smart as KITT.

7) I heard that Cadillac opened a coffee shop/art gallery in its new office in New York City, and that it even has a custom scent. What's it smell like?

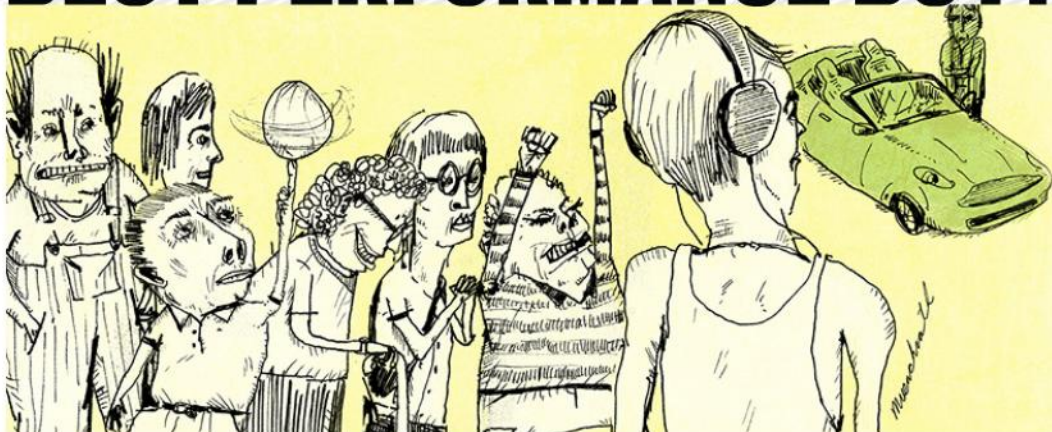
It's quite pungent. It's really a formidable scent. It stings the nostrils. In a good way. I'm gonna be honest with you: It smells like pure gasoline.

8) If other automakers were to bombard millennials with similar establishments, what sort of wares might they offer?

- **Aston Martin:** symbiotically harvested longboard pavilion
- **Audi:** wind-powered denim tapery
- **Bugatti:** communal pencil-craft repository and sharpenery
- **Chevrolet:** organic bow-tie truck
- **Chrysler:** salvaged board-game arcade
- **Fiat:** collaboratively recovered cigarette-butt gallery
- **GMC:** rehabilitated flannel emporium
- **Jeep:** emancipated Mason-jar porch
- **Kia:** investigational fusion-grass amphitheatre
- **Lexus:** disencumbered penny-farthing boutique
- **Maserati:** reclaimed short-wave radio exchange
- **Mazda:** sympathetically foraged shoelace bazaar
- **McLaren:** quadrupedal ruminant grazery
- **Mercedes-Benz:** pre-ironic moustache-wax kiosk
- **Mini:** upcycled barrette dispensary
- **Nissan:** free-range barn-wood bodega
- **Subaru:** responsibly oxidized Subaru distributary
- **Volvo:** naturalized Hamm's co-operative



9) WHAT'S THE YEAR'S BEST PERFORMANCE BUY?



10) WILL I SAVE MORE MONEY BUYING THROUGH A SERVICE LIKE TRUECAR, COSTCO, OR CARSDIRECT, OR SHOULD I NEGOTIATE MY OWN DEAL?

"It's less about rock-bottom deals and more about transparency and trust," explains Hanno Lorenzl, a principal with the Ernst & Young consulting firm, about car-buying services. Their appeal, he says, is that the consumer knows with certainty that they are getting a good deal, even if it's not the absolute best. "To get the best deal you have to time it right, get the right incentives, right time of the year, and the right model," Lorenzl explains. In many cases, it comes down to the right car or the right price. If you're a killer negotiator, maybe you can get both. But most people go years between buying new cars; the dealer sells them every day. The real advantage of buying services is that they are always in the market.

■ HOW ABOUT \$71 FOR 24 HOURS with a BMW M4? Beating the system like this is almost always illegal. Or against the rules. Or, minimally, not worth the trouble. But communal-car service Turo is about to give reality a solid beat-down.

We say this because no matter how we look at it, 24 hours with an M4 for \$71 is a wildly compelling proposition. And Turo provides just such an offer. If you prefer to rent a Chevy Corvette for \$119 a day, or a Porsche 911 for \$212, the company can facilitate that, too.

These are just some of the deals listed on Turo's website, which proffers privately owned cars for rent at a price often set by the owner. The seven-year-old startup, originally branded RelayRides ["Rides for Rent," November 2012], offers vehicles in 2700 North American cities, including Los Angeles and San Francisco. The appeal to renters is obvious, but why would anyone with the means to own such a car bother with the risk and hassle of renting it out?

Turo claims that the average owner ("host" in Turo speak) pockets \$600 monthly from the service. Michael D. Resnick, a Los Angeles attorney, bought his Aston Martin V-8 Vantage convertible intending to rent it through Turo and, well, because he wanted an Aston. His car usually is rented for 10 days a month at \$260 per day. His \$1100 monthly cost of ownership makes it good math.

"I enjoy spending a little energy on it," he says, "and I get to drive it the rest of the time." We also spoke with a host who leases the car he offers for rent, despite the fact that some lease terms prohibit such activity. It's easy to understand how his short-term commitment to the car provides him peace of mind.

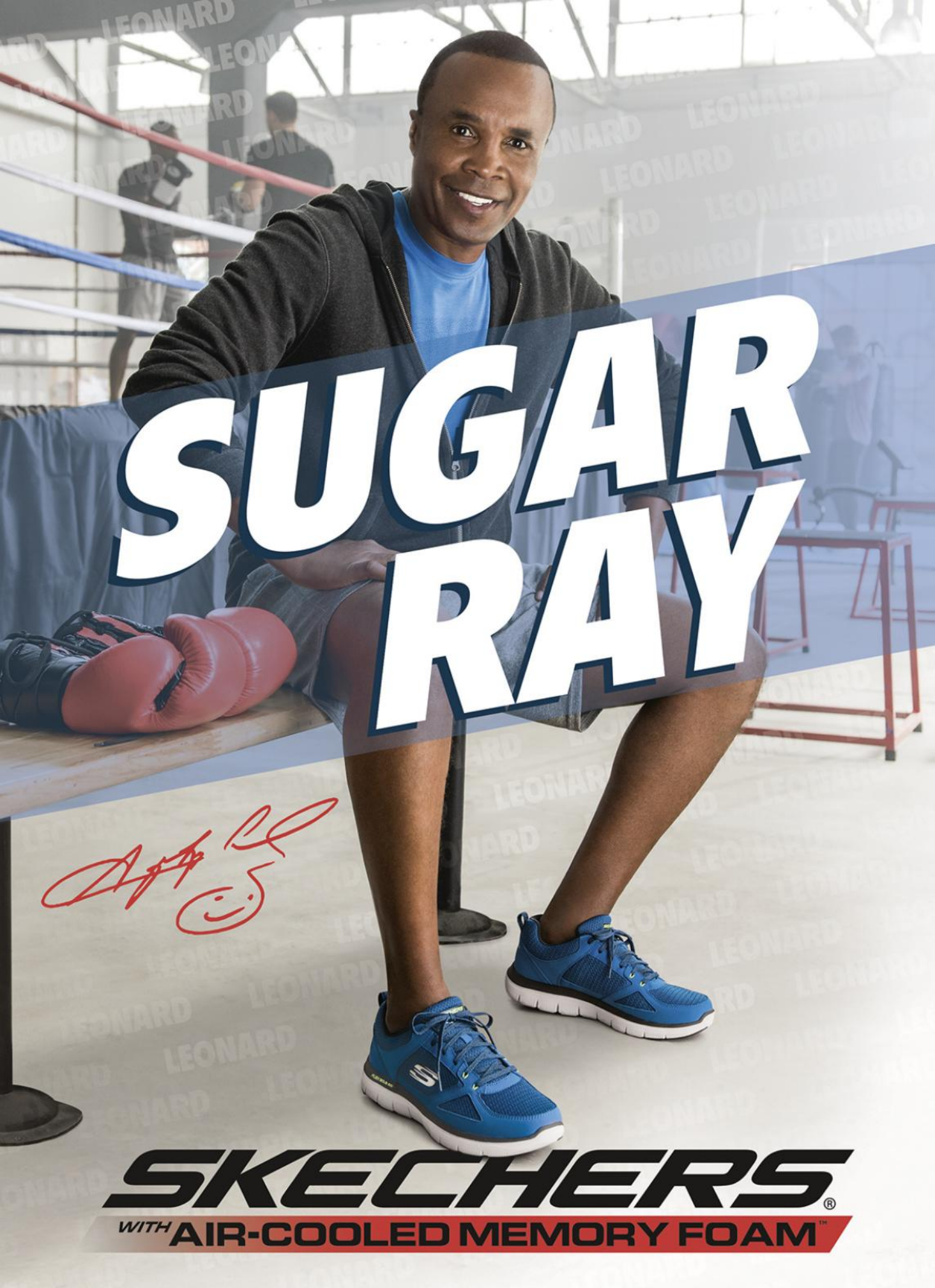
That Turo's \$1 million liability coverage brings comfort to even a professional litigator such as Resnick says something. "There's

risk," he says, "but it's less than loaning the car to a friend." Turo's coverage exceeds that of his personal policy. Three-tiered insurance plans for hosts allow them to pocket 65, 75, or 85 percent of the rental fee. All three options include the \$1 million liability coverage for bodily injury and property damage to a third party. The premium policy even fixes small items such as scratches. No owner we spoke with had incurred any damage, though spun bearings and bent rods remain the costly elephants in the room. Renters can also decline Turo's insurance and rely solely on their personal policies.

Steve Webb, Turo's director of community and communications, says Turo's insurance claims occur at a rate of only 6.7 per 1000 rental days, so either owners aren't looking carefully at their returned cars or the popularity of the Hertz Neutral-Drop World Championship is fading. Either way, 200 bucks for an evening with a new 911 sounds worth it to us.

11) Will a new car keep me from killing myself while texting and driving? 📱

Possibly. At any given moment, says the National Highway Traffic Safety Administration, 660,000 Americans are using phones and other electronic devices while driving. And don't expect device addiction to slow down. Smartphone ownership is on the rise, and the Pew Research Center reported that 53 percent of the adult smartphone owners it surveyed had been involved in a distracted-driving incident. That doesn't bode well for road manners. But, if your new car has the sort of semi-autonomous functions that are so annoying to drivers who are paying attention, you, smartphone junkie, might buy yourself a few critical seconds.

A full-page photograph of Leonard Roberts, a Black man, sitting on a wooden bench in a boxing gym. He is wearing a blue t-shirt, a dark grey zip-up hoodie, and blue Skechers sneakers. He is smiling at the camera. To his left, a pair of red boxing gloves lies on the bench. In the background, a boxing ring with red and blue ropes is visible, and another person is working out. The background is filled with a repeating watermark of the name 'LEONARD'.

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Leonard Roberts

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12) CAN I GET ALL OF 2017'S INFOTAINMENT CONVENIENCES IN MY OLD CAR THANKS TO MY SMARTPHONE?



15/

Can I really trust an old airbag, or do they all eventually become dangerous?

Takata's recalled airbag inflators are time bombs because of how ammonium nitrate degrades in response to changes in atmospheric humidity and temperature. But other airbag propellants such as sodium azide, guanidine nitrate, and tetrazole are generally regarded as stable for the lifetime of the vehicle. In automaker contracts with suppliers, however, a "lifetime" is typically 15 years. Airbag supplier Autoliv, for example, runs leak tests to guarantee that its inflators lose no more than 10 percent of their original performance over that interval. Then what? Airbag inflators use hermetic glass-to-metal seals. While these could theoretically preserve the contents for decades, no one wants to go on record saying so. However, up until the early 2000s, automakers explicitly told owners to service or replace airbags after 10 to 15 years. Now they don't mention it. And even if, worst-case scenario, your 30- or 40-year-old airbag doesn't inflate with quite the intended force or speed, that's still better than a faceful of Takata shrapnel.

PHOTOGRAPH BY JOHN ROE/ILLUSTRATION BY DARCY MUENCHRATH

THE KEY TO USING A PHONE as an in-car infotainment system is hardware, not apps. A good phone mount keeps the driver's eyes up and the device within reach. The Logitech [+] Trip (\$30) clips to an air vent, placing the phone closer than a windshield mount, and allows you to install and remove the phone with one hand. To keep your battery charged while running GPS, Bluetooth, and a music-streaming service, look for a 12-volt USB adapter with at least 2 amps of charging current. The Aukey CC-S1 Dual USB car charger (\$13) features two such ports. For vehicles without Bluetooth, the terribly named **iClever Himbox HB01 (\$30)** can turn an auxiliary audio input port into a wireless connection for streaming music and making hands-free phone calls.



Right out of the box, any decent smartphone can match leading OEM systems everywhere it matters: GPS, streaming audio, and voice recognition. If you need to venture from Apple or Google Maps for navigation, try Waze. The free app augments point-to-point directions with crowd-sourced accident, traffic, and speed-trap reports.

13) How much safer is a new car than my old one?

Depends on vehicle age, but "probably a lot" is a good starting point. According to IHS Automotive, an auto-industry analysis firm, the average car on American roads is more than 11 years old. Electronic stability control (ESC) and side airbags were just becoming available on mass-market vehicles in 2006. ESC became a federal requirement for 2012, and side airbags have become much more common over the past decade. Plus, new crash-testing procedures, such as the small-overlap test introduced by the Insurance Institute for Highway Safety in 2012, are constantly pushing automakers toward achieving greater impact survivability.

14) WILL THIS BE THE YEAR MY CAR GETS HACKED?



The most notorious hack was the 2015 overtaking of a Jeep Cherokee by Charlie Miller and Chris Valasek, detailed in *Wired* magazine. As the pair explained at the 2015 Black Hat hacker conference, they accessed the Jeep's Uconnect system through its Sprint cellular connection, found a way to get to the main CAN bus by reprogramming the intermediary V850 controller, and then were able to use a laptop computer to control various vehicle functions, including braking and acceleration. FCA has since modified Uconnect to prevent anyone from recreating that particular breach.

Cars without cellular or Wi-Fi connections remain virtually untouchable. But if any tech geniuses have a grudge against you and your connected car, there is a greater-than-zero chance—0.0001 percent, says Miller—that you could be hacked. So don't piss off the MIT Biomimetic Robotics Lab. And all bets are off for 2018.



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16) WILL AN EV WORK FOR ME?

WITH A DOZEN DIFFERENT models on sale, it seems safe to say that EVs have arrived. But the uncertainty surrounding whether or not their drivers will arrive at their destinations—most EVs are small hatchbacks with 50 to 90 miles of real-world range—still keeps buyers at bay.

The majority of U.S. households have two cars, though, and the average round-trip commute falls within the range of most EVs. Operated within the range-anxiety radius, EVs make sense as actual cars instead of energy-saving calculators—if you don't buy one new.

According to the National Automobile Dealers Association, average trade-in values for three-year-old EVs dip by more than 70 percent compared with 50 percent for gas-powered compact cars. Battery technology is rapidly improving and getting cheaper. BMW, Ford, and Nissan just upped their capacities for minimal price increases, and, as with old cellphones, EV battery life will inevitably degrade, leading performance to deteriorate faster than it does with a gas engine.

Leasing, however, provides a level of protection against depreciation. And, if an improved model comes out before your term ends, your dealer may upgrade you early. While you can't claim the \$7500 federal tax credit in a lease, your monthly payment will include the discount. Plus, you can still take advantage of state-level rebates and tax credits.

ALTERNATE CURRENT

If you're shopping for an EV, look, as executive editor Aaron Robinson did, at buying used. (In general, though, we urge you to not behave like Robinson.) In 2015, he bought a 2012 Mitsubishi i-MiEV with just 2616 miles on it for only \$8500. Original MSRP was \$28,840. In his words, "It is definitely not all the car we need in every situation, but we've found it enough of a car to work just fine about 95 percent of the time." His average cost for Southern California electricity? Just three cents per mile.



17) Which automaker is doing the best job of future-proofing its infotainment systems?

Not Toyota, which in June sent owners a wireless update that crashed Lexus Enform systems with violet screens of death. Audi, BMW, Ford, and Volvo are slowly feeding over-the-air upgrades to new cars, installing new maps and system software without a dealership visit. But only Tesla dares fuss with critical ECUs deep inside its cars—enabling autonomous driving, altering the air suspension, and modifying code that other brands won't touch without a technical service bulletin. Tesla is famous for releasing beta versions of its systems and then correcting them on the fly, yet owners are happier for it. No automaker has suggested swapping out hardware like hard drives and processors, but as cars become more like PCs, upgrades could be as easy as visiting Best Buy.



18) Why aren't other automakers challenging Tesla?

Now that the EV's staying power is proven, many will, shortly. Mercedes-Benz is working on a dedicated electric-vehicle platform configured like a Tesla, with its batteries in the floor, and is expected to produce four models on it over the next several years, including both sedans and crossovers. Volkswagen says it will produce 30 electric models over the next decade. An electric Porsche performance sedan on a dedicated platform arrives within the next few years, previewed by the Mission E concept. That 600-hp four-door is a direct shot at the Model S. Audi will target the Model X with an all-electric crossover expected in early 2018. In the lower price ranks, Chevy is readying the Bolt [see page 056], a 200-mile EV that will beat to market the admittedly more attractive Tesla Model 3.

PHOTOGRAPH BY MARC URBANO



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19) WHEN WILL I REALLY BE ABLE TO BUY A TESLA MODEL 3?



AN ERRANT ICEBERG stopped the *Titanic* a little shy of New York.

A minor hiccup forced *Apollo 11* to land four miles downrange from its target site on the moon. Big plans rarely go perfectly smoothly, and right now, no one in the car business has more ambitious plans than Elon Musk has for Tesla, which promises to launch a \$35,000 Model 3 within the next two years.

Developmentally, the Model 3 occupies an unclear position between notion and production. Yet, in May, Musk pledged that Tesla would deliver 500,000 new electric cars annually by 2018 and a full million by 2020. Tesla knocked out only about 30,000 cars during the first half of 2016. Musk seems to thrive on setting monumental challenges for himself and his company and compounding them until they are unimaginably daunting—and then missing his delivery date by a year or two and still proclaiming success.

Projecting exactly when the Model 3 will go on sale (Actual Launch Date, or ALD) takes sophisticated mathematical analysis that incorporates several important factors, including the inevitable Plant Construction Problems (PCP), whether or not Musk Insults or Sues any Suppliers (MISS), and the Massive Determination Factor (MDF) displayed by Musk in achieving his goals. So starting with an Initial Promised Date (IPD) of “Late 2017,” the elegant equation looks like this:

$$ALD = IPD + \frac{535 \times PCP \times MISS}{MDF}$$

The 535-day delay constant is based on Tesla’s track record with the launches of previous models [see “Reliably Late”], while the timeline amplifiers of PCP and MISS are expressed as inverse percentages of their likelihood of occurring. So:

$$ALD = IPD + \frac{535 \times 1.09 \times 1.08}{1.02}$$

Here, we have a delay of 617.5 days. That’s about one year and eight months, which, when added to our Initial Promised Date of Late 2017, gives us an Actual Launch Date in the middle of 2019. But Tesla is also facing Intense Financial Pressure (IFP) as it burns cash and the sheer production scale runs up against the Physical Impossibility Redline (PIR). Throw in an Act of God (AG) and the obligatory Uncontrolled Chaos Multiplier (UCM), plus control for Musk’s Incredible Good Luck (IGL), and the equation glistens with insight and nuance.

$$ALD = IPD + \frac{535 \times PCP \times MISS \times IFP \times PIR \times AG \times UCM}{MDF \times IGL}$$

So:

$$ALD = IPD + \frac{535 \times 1.09 \times 1.08 \times 1.10 \times 1.01 \times 1.01 \times 1.11}{1.02 \times 1.15}$$

That results in 668.8 days, or about a year and 10 months. We’ll put our money on the first Model 3s being delivered in September or October of 2019. Assuming, of course, we haven’t failed to account for any variables.



20) What is the newest feature to avoid if I buy a car this year?

Self-driving capability. Yes, such systems will save your bacon if you’re stalking someone on Instagram or clicking through to find out why “You Won’t Believe Number 17!” But if you’re actually paying attention and engaged in the driving of your car, then semi-autonomy is just a suite of systems that, at their best, beep and buzz at you and, at their worst, wrestle with you for control of the wheel and slam on the brakes at inopportune times.

RELIABLY LATE

IN OUR MODEL 3 EQUATION, THE 535-DAY DELAY CONSTANT IS BASED ON RIGOROUS HISTORICAL ANALYSIS, WITHOUT EVEN A HINT OF OPPORTUNISTIC DOUBLE ROUNDING—TEMPTING AS IT MAY BE.

TESLA ROADSTER

ANNOUNCED: JULY 19, 2006
PROMISED: SUMMER 2007
DELIVERED: FEBRUARY 6, 2008

TESLA MODEL S

ANNOUNCED: JUNE 30, 2008
PROMISED: 2010
DELIVERED: JUNE 22, 2012

TESLA MODEL X

ANNOUNCED: FEBRUARY 9, 2012
PROMISED: LATE 2013
DELIVERED: SEPTEMBER 29, 2015

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THE IIHS TOP SAFETY PICK.**

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Government 5-Star Safety Ratings are part of the National Highway Traffic Safety Administration's (NHTSA's) New Car Assessment Program (www.safercar.gov). Tests include driver and passenger front, side and side barrier and pole tests.

Back before the Cuyahoga River caught on fire, when caring for the environment meant dumping your used motor oil on rural gravel roads, my father would drive our black VW Bug to the Olentangy River, near Delaware, Ohio. We'd

head for the middle of the river—never more than about eight inches deep—where my father would wash the VW and I'd hunt for albino box turtles.

When I think about truly new cars, I think about autonomous cars—the L5s that require no human input. And you know what? I don't think they're gonna allow any river soirees. In fact, this whole subject is a festival of question marks.

For instance: Let's say you're on a ramp trying to merge onto an interstate. You glance over your shoulder and see two 18-wheelers side by side. Your brain tells you, "Hey, I can make this work if I bury the throttle to merge ahead of those trucks." But what will an autonomous car's brain think? Will it know what's shaping up in the rearview mirrors? What if, to merge safely, you briefly have to exceed the speed limit? Will your self-driving pod even allow that?

Or imagine you're humming along and, up ahead, a guy on the right is pulling out of his driveway. I've saved myself thousands of auto-body dollars by staring at that guy's face to see if he's looking at me. But will an autonomous car derive any information at all from that fellow's carefree mug?

Given that autonomous cars will "see" so much better than humans, especially at night, will we then welcome back a sloppy ocean of DUI convictees who are currently

in forced retirement? What about my deaf 92-year-old Uncle Seth, who last lost his license waiting through two stoplight cycles so he could jam a plug of Mail Pouch in his mouth? By the way, Uncle Seth was fond of his Mad Dog 20/20. If the car of the future does all the thinking, will he legally be able



to chug the fruity contents while in transit to the bingo semifinals? If so, then blind folks, too, right? And how about the seriously disturbed in mind and hygiene? How about all of Mrs. Hastings's most evil fourth graders? Will this be the end of every-

one's driver's licenses and the start of mandatory national ID cards? Will self-driving pods put a terminal squeeze on light rail and buses? Will road-use tax be baked into our utility bills? And if we welcome back everybody to America's roads, will we be creating the very traffic snarls that driving pods were, in part, intended to obviate?

When there's no steering wheel in a car, well, to me that's an elevator or a train, and look how many Amtrak coaches have gone shooting like comets into various tidal basins. Will an autonomous car recognize a cop standing on the berm, gesturing for you to pull over? No? Well, if the car doesn't "see" Officer Snotfuller, remember this: The one thing cops hate more than flies in their Big Gulps is a civilian who doesn't instantly obey their commands. Can you

spell TASER? Except it won't be a TASER, because all future cops will wave a magic-wand master-kill switch that, once aimed in your direction, will kill your little pod deader than Karl and Groucho Marx combined.

And, if every car relies on GPS, how hard will it be for the cops to determine you're at McShane's Lounge? You can bet the police will have a national database such that a few keystrokes answer that question. Or will it inspire the radar-detector manufacturers to sell little black boxes that scramble your GPS coordinates?

Speaking of cops, will they, too, conduct business in their own automated pods? I hope so. I say that because, after 800 episodes of *Cops*, I can't ever remember an officer driving with both hands on the wheel. Apparently they save all their concentration for cracked taillights.

Will autonomous cars allow any owner maintenance at all, other than checking tire pressures? Will that be the end of high-school mechanics' shops? Or if your pod is shared, who among its drivers is the tire-pressure watcher? If the pods all look alike, there's little incentive to own one outright, at which point we'll treat our vehicles like Budget rentals and you'll have to use a shovel to find the floors.

I'll bet the only way to increase an autonomous pod's performance is to remove weight. So I can see myself saber-sawing out the back seat and creating a company called "Pulled Me Once" that sells two-ounce carbon-fiber door pulls.

To me, it all sounds like driving a really big iPhone, a square dance of algorithms. We're gonna need "Driving Parks" to which we can trailer our Subaru WRXs for a day of thoughtless speed and whopper insurance premiums. But I must say I'm optimistic about L5 pods' potential to save 30,000 American lives each year.

Isn't it ironic that we'd apply such engineering, intellect, dedication, and costly resources to reach that outcome, yet we express so little interest in reducing a like number of annual gun deaths? We are funny people. Hilarious, even. ■

John Phillips

MAS_Q0_June21_R10

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My friend John Lacey and I were strolling a car show a while back when we spotted a 2003 Volvo S60R with its hood open. For five minutes I recalled to John the launch of that car at the Circuit Paul Ricard in France.

The Volvo engineers were very proud of the hydroformed aluminum air pipe that bends and twists its way over the top of the engine from the turbo. It was a pleasant little memory. John said that going to car shows with me was unlike going to car shows with anyone else. I guess that's a compliment.

You know you're getting on in this business when new cars you covered as a rookie start appearing at shows as proto-classics. My very first words in this magazine, besides a letter I wrote to Brock Yates in 1999 accusing him of unfairly maligning the Suzuki Swift GT, were for



a road test of the Dodge Durango R/T in the September 2000 issue. Because I thought the thing was such a lumbering gas pig, I asked photographer Aaron Kiley to surreptitiously plant a small plastic dinosaur in all the shots. I imagined a few sharp-eyed readers spotting a tiny stegosaurus or triceratops in each picture and getting the subtle message with a chuckle. Kiley knew management's sense of humor better but still obliged me with a couple of pics with a toy *T.rex* loitering somewhere in the shot. None of them were used and, 16 years later, I'm still sad about that.

I haven't seen a Durango R/T at a car show, but I recently saw a Qvale Mangusta, a headliner in our October 2000 New Cars issue. In the likely event that you've forgotten, the Italian-made hardtop roadster with

Ford Mustang SVT Cobra guts was supposed to be a joint venture between Alejandro de Tomaso and San Francisco car dealer Kjell Qvale. Shockingly, the old Argentine proved too prickly to work with, and Qvale ended up pasting his own name on a pretty decent car with the face of a monkfish

inflated to 170 psi. Before driving it, I visited the factory in Modena as well as a few suppliers up in the Apennine Mountains, where workers were indeed plink-plinking away on aluminum and steel, just as you'd imagine they do. Apparently feeling obliged to present me with a gift, they reached into a random bin and handed me a handcrafted aluminum oil separator—a small box with tubes sticking out of it—for a 2000-something Maserati Coupé. It's proudly on display at the bottom of a drawer in my garage, awaiting the moment I buy a used Maserati Coupé with a leaky oil separator. Which is currently scheduled for never.

Not long after, we were comparison-testing eight mainstream sedans in southeast Ohio when Kiley and then assistant art director Danny Winter came tearing up. "They're crashing planes into the World Trade Center!" one of them gasped. There were no phones or televisions nearby, so we all gathered around a car and listened to it on AM radio, much as they did on December 7, 1941. Everyone was in a foul mood after that; we actually bickered over

whether to stop at a Dairy Queen. To this day I can't see a W-body Chevy Impala, the one with the big round taillights and a wide red band across the trunk, without thinking about that test. Or without wondering how Patrick Bedard produced his usual sparkling copy instead of a rant at how petty our work suddenly seemed.

Pondering the memories that cars engender, I recalled a religions professor I had in college who explained the importance of holidays and other festivals thusly: Besides honoring a particular deity, our ancient ancestors created holidays mainly to mark time. Without Christmas and Ramadan and Yom Kippur, without Diwali and Qingming and Día de los Muertos, our short stretch on this earth would be even more of a dissipated blur than it already is. Holidays, along with birthdays and weddings and other celebrations, are rocks in the river of the year, disrupting the fast, glassy, seamless flow of our journey out to the ocean of oblivion. They make joyous froth, maybe a little turbulence, and ideally a calming eddy or two that becomes a pleasant hook on which we hang a memory.

We who love cars instead of, say, fishing (to stick with the river metaphor) are lucky in our choice of passion in one respect: New cars are always arriving. The steelhead trout probably hasn't changed much in the last million years, but the Honda Accord changes at least twice a decade. Car designs are reflections of their moment and, as such, become excellent vessels for our own memories of that same moment. I can't recall exactly where or when I first saw a C4 Chevy Corvette, but seeing one now takes me right back to high school.

The new cars of 2017 will eventually be outdated—indeed, more quickly than their designers would like to admit. You may not care about any of them any more than I care about the 2001 Impala with what Don Sherman once called a "baboon butt," but they are rocks in our river, giving us a time and a place to roll the mental film reel. If you happen to be reading these lines decades after their publication, I hope the cars in here are transporting you back to a happy time. ■

Aaron Robinson

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I am a big deal, a tastemaker, a shaper of our national discourse. I can get people to do anything. I invented the man bun and bringing your dog on the plane. You know the whole kazoo craze? No, of course you don't. I haven't started

it yet. But when I do, you'll love it. Because I understand what you want before you want it. And I think it's time you wanted an Alfa Romeo 4C. Coupe or Spider, take your pick.

The 4C's been around a couple of years now but remains mired in the bog of obscurity, shrouded in the mist of indifference, double-parked on the boulevard of unfair expectations. Yeah, a 4C Spider can run 70 grand, and for that dough you could buy a Corvette or a Boxster. You could also buy 20,000 baloney sandwiches. What's your point?

You should want an Alfa 4C because it's a beautiful anomaly. If an entrepreneur went on *Shark Tank* and presented the 4C as a business idea, Mark Cuban would say that he'd rather get in a time machine and put all his money in Pets.com. You say you want to build a mid-engined carbon-tub sports car in Modena, Italy, and sell it for \$57,495? Why, the carbon tub in Ron Dennis's master bathroom cost more than that! And no, I have no proof that Ron Dennis has a carbon-fiber bathtub. But that sounds right.

In an age when BMWs play *vroom-vroom* noises through their stereo systems, the Alfa invites you to listen to its fuel injectors, chattering away like 2900-psi cicadas. The turbocharger's soundtrack is mini McLaren, with the compressor shrieking and gulping and occasionally chirping on the boost dump, the World Rally Champi-

onship happening right behind your head. There's an optional Akrapovič dual-mode exhaust system, so the 4C can go loud in dynamic mode and quiet in natural. There's also a racing exhaust, which has no muffler at all and is just permanently loud. But after hours and hours and hours and hours of driving, the exhaust sort of seems to get quieter and quieter until you barely notice it. What's that? You said something about my experience with herring laws? What do I look like, a Norwegian maritime attorney?

The 4C is not without its eccentricities. An alarm shrieks at you when you start it up, presumably to remind you to buckle up. When you do buckle up, the shoulder belt rides against your neck like the switchblade of a lethargic mugger. There's no park position on the transmission. And this might be the last production car with an Alpine head unit. You can remove the faceplate for security, but don't bother because nobody remembers how to steal an Alpine.

The 4C's steering is leaden in a parking lot but so great on a fast, smooth road—or, better yet, a track. Earlier this summer, I invited an engineer for another car company to take a 4C for a few laps around VIR, and he said: "This is unassisted steering, right? Wow. You feel the kickback through the wheel when you go onto the corner curbing. It's been a long time since I've felt

that." You also feel everything else through the wheel, good and bad. This wheel is so sensitive, a beautiful sunset makes it cry.

And maybe this is an exceedingly obvious point, but this car is beautiful. In fact, on looks alone, the Alfa Romeo 4C is an exotic. People freak out when they see it. The last time I drove one, it took about 30 seconds before a guy approached with his phone in hand and asked if he could take photos. "I'm never gonna see a car like this again in my life," he said. I told him that I hoped otherwise. Another time, I returned to the parked Alfa to find a guy and his two teenage sons standing there checking it out. "They told me this was here," he said, "so I came straight from work. Seeing this car made our day." I ask you, what \$58,000 car makes anyone's day? I just drove a \$54,000 Ford Explorer and it was very nice, but not one person asked for a selfie with it.

Yet despite the public adulation and bargain carbon, I see the 4C following a familiar trajectory. First, a European company with a legendary racing heritage brings us a hard-core driver's car and we rejoice. But soon we start griping and nitpicking the thing to death and sales tail off. We take the car for granted until it's gone, at which point we wail and rage at its loss. Then, a few years later, you think about buying a used one and find that they haven't depreciated much at all, thus validating the original appeal of the retroactively celebrated machine. I mean, have you looked at Lotus Elise prices lately? Because I'm talking about the Lotus Elise, in case you didn't get it.

Through May of this year, Fiat Chrysler moved but 273 4Cs. The similarly priced Hellcat? Chrysler is planning to sell 9000 of them this year. When my in-laws were shopping for a Durango, the salesman said, "The other day a guy came in here, wrote a check for a Hellcat, and told us to call him when we got one." The lesson here, I suppose, is that Americans like big loud American things more than they like small loud Italian things.

That's about to change, by my say-so. You, over there: Buy a 4C. And lose the man bun. You look ridiculous. 🇺🇸



Ezra Dyer



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With daring curves, a commanding race-inspired stance, and handling so responsive it feels like the car is an extension of you, the Q60 is beautiful to behold and even more extraordinary to drive.



INFINITI

EMPOWER THE DRIVE

Pre-production model shown. Final production vehicle may vary. ©2016 Infiniti.

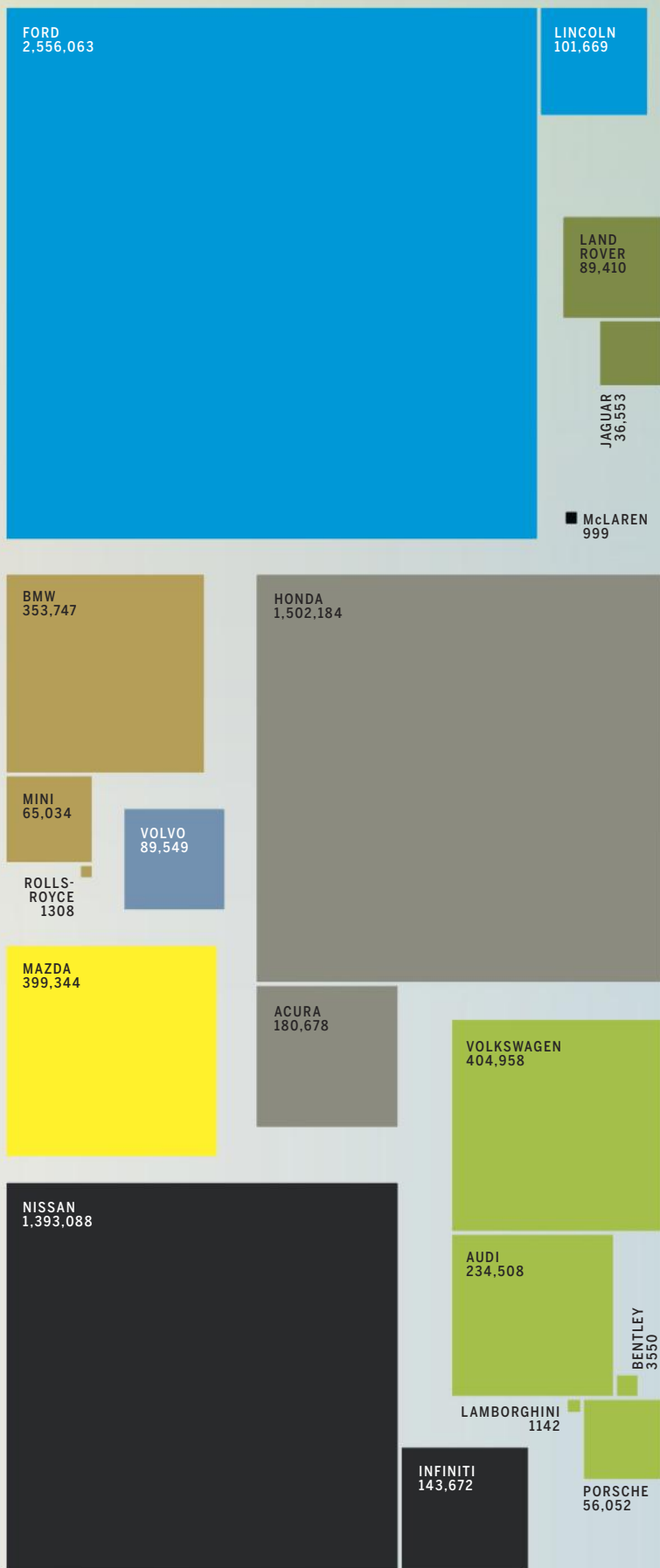
New Cars for 2017

To lead off our coverage of all that's happening in the new-model marketplace this coming year, we figured we'd put some numbers to the sheetmetal. Not surprisingly, those brands with the most utility-heavy lineups get the most real estate here. Color-coded and clustered by corporate ownership, this mall map of manufacturers should provide good guidance to next year's vehicle market. Not depicted on map: The location of the Orange Julius.

2017 U.S. SALES FORECAST: 18.2 M

These fun shapes represent the anticipated sales volume in 2017 for each brand in the United States, according to IHS Automotive.*

*Does not include the following low-volume brands: Bugatti (12) and Lotus (192).



SUBARU
632,575

HYUNDAI
796,598

GENESIS
22,533

KIA
712,336

TOYOTA
2,196,822

TESLA
37,444

FERRARI
2190

ALFA ROMEO
25,040

FIAT
57,585

RAM
526,287

MASERATI
17,166

DODGE
362,624

CHRYSLER
221,212

JEEP
868,396

LEXUS
343,402

ASTON MARTIN
882

GMC
558,884

CHEVROLET
2,174,986

CADILLAC
164,190

BUICK
301,163

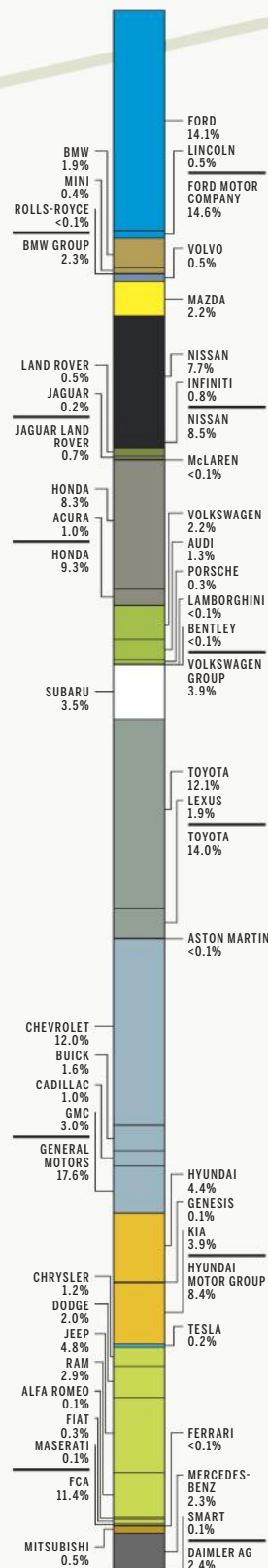
MITSUBISHI
94,262

SMART
10,194

MERCEDES-BENZ
417,644

2017 MARKET SHARE

Stack all those boxes on the left and you'll have this: a visual representation of predicted market share. Separate figures are listed for all 42 individual brands as well as the 11 conglomerates.



New Cars for 2017

The List

Details of each brand's 2017 model-year lineup begin here and run through all the drives and tests in this section. Significant changes merit their own entries; minor trim updates, unchanged models, and discontinued vehicles are noted at the end of each brand's rundown. And don't be surprised if you find some upcoming 2018 models in here, too—we uncovered a lot of long-range information in our reporting.

ACURA

MDX: Along with a mild exterior refresh consisting of new bumpers, headlights, hood, grille, and fog lights, the MDX also receives the RLX Sport Hybrid's gas/electric powertrain as an

option. Peak power for the hybrid is 325 horses, up 35 from the gas-only model, but the additional weight of the system might keep acceleration figures from improving. Acura estimates the hybrid will hike city fuel economy by 7 mpg, for a 25-mpg rating. The Technology and Advance

package now comes with genuine wood interior trim, a heated steering wheel, and second-row captain's chairs. All 2017 MDXs come standard with AcuraWatch, the brand's suite of advanced safety features.

NSX: Deep-sea octopuses have been known to brood their eggs for four and a half years. They have nothing on Acura's gestation of its long-awaited NSX. We first reported on a successor to the original NSX in 2007. That car was a front-engine V-10—nothing like the mid-engine, all-wheel-drive, three-motor hybrid we get for 2017. An all-new twin-turbo 500-hp 3.5-liter V-6 and nine-speed dual-clutch auto do most of the work, with a 50-hp motor augmenting power to the rear axle. Like the Porsche 918 Spyder, its front axle is purely electric-drive. A crafty two-motor (36 horsepower each) axle adds torque up front when needed, as well as torque vectoring, mostly to improve turn-in response of the

aluminum-and-carbon-fiber coupe. With a total of 573 horses in play, a starting price of \$156,940, and an estimated zero-to-60-mph time below three seconds, the NSX is positioned in the thick of the sub-Ferrari and -Lamborghini supercar market. Could it be worth the wait?

Unchanged: ILX, RDX, RLX/Sport Hybrid, TLX

ALFA ROMEO

Giulia: Alfa's new BMW 3-series-fighting sedan arrives in the U.S. with a choice of two engines. The base-spec and Ti cars squeeze 276 horsepower from a turbo-charged 2.0-liter four-cylinder, while the Quadrifoglio offers 505 horses from a 2.9-liter V-6 that's essentially (basically, kind of, if you squint) a Ferrari 488GTB's mill with two cylinders lopped off. The V-6 is backed by a six-speed manual; the four-cylinder works with an eight-speed automatic. All-wheel drive is available on the four-cylinder cars, and an adjustable suspension is

ACURA
NSX



optional on the mid-level Ti and standard on the Quadrifoglio. Opt for the biggest engine and get standard aero bits, as well as the option to purchase carbon-ceramic brakes.

— **Unchanged:** 4C/Spider

ASTON MARTIN

— **DB11:** The turbo train hits Aston Martin with the new aluminum-intensive, twin-turbo DB9 replacement. This, the brand's middle child, goes on sale in November starting at \$214,820. The DB11 introduces a 600-hp port-injected 5.2-liter V-12 that, like its 5.9-liter naturally aspirated predecessor, comes from Ford's Cologne, Germany, engine plant. It's a precursor to a company-wide move to turbos; the next Vantage will have a Mercedes-derived turbocharged V-8. The DB11's styling evokes traditional Aston-ness

but with new angular chiseling and an eye-grabbing "roof strake" (basically the A-pillars and structural beams over the side glass) that can be rendered in various finishes. An updated interior runs the new Mercedes-derived electrical architecture with an all-digital gauge cluster and a modern center-console infotainment unit. With less engine displacement, plus cylinder deactivation, the DB11's fuel economy should handily beat the DB9's suck rate of 13/19 mpg, city/highway.

— **Rapide S:** Along with the rest of the Aston lineup, the four-door gets a new center-console infotainment system with upgraded sat nav and Apple iPhone integration, a dividend of Aston's recent partnership with Mercedes-Benz.

— **V-8 Vantage:** The next (and probably last) 100

copies of Aston's aging entry-level car will be badged GTS, in coupe or roadster form, and in either Sport or Lux trim. All other trim levels go away. A Vantage replacement, however, is on the way.

— **V-12 Vantage S:** A seven-speed manual becomes an \$11,200 option on 100 individually numbered units, so 007 may want to hone his stick skills.

— **Minor trim changes:** Vanquish
Dead: DB9 GT, Vulcan

AUDI

— **A4/S4:** We hope you liked the styling of the old A4, because the new-for-2017 A4 is a Kentucky cousin if ever there were one. A revitalized version of the corporate turbocharged 2.0-liter inline-four rates at 252 horsepower and 273 pound-feet of torque, up by 32 ponies and 15

pound-feet, respectively. A new seven-speed dual-clutch automatic replaces the previous car's conventional eight-speed auto. Comfort comes by way of standard leather seating surfaces and a sunroof, not to mention a remarkably low C/D-recorded interior noise level of just 63 dBA. Drivers looking for a little more pep in their A4's step will want to cool their heels until the 2018 S4 goes on sale in early 2017. Featuring an all-new turbocharged 3.0-liter V-6, it will be available with only a ZF eight-speed torque-converter automatic, as Audi has killed the six-speed manual (insert snuffles and tears here) that was available in the previous S4.

— **A5/S5:** *see first drive, page 048*

— **A8/S8:** Audi's big sedan goes long for 2017, as the regular-wheelbase A8 has been discontinued. The S8 continues to ride on the five-inch-shorter standard wheelbase.

— **Q7:** Redesigned for the 2017 model year, the three-row Q7 employs high-strength steel and plenty of aluminum components to shed

more than 270 pounds compared with the previous model, according to our scales. Despite the weight savings, Audi managed to carve out an additional 1.6 inches of headroom in both the front and second rows, as well as an additional 1.7 inches of second-row legroom. The 3.0-liter TDI is a victim of VW's Stupid-gate, or whatever we're calling it now, and has been banished from our shores, leaving the excellent supercharged 3.0-liter gas V-6 as the sole engine choice. Producing 333 horsepower and 325 pound-feet, it delivers the goods via an eight-speed automatic and standard all-wheel drive. Inside, Audi's 12.3-inch TFT instrument-cluster display is available as the industry's first onboard IMAX screen (okay, maybe Tesla's was first). To distract us from the abrupt departure of the 3.0-liter diesel, Audi is prepping its high-performance SQ7 with a 4.0-liter diesel V-8 using two conventional turbochargers as well as an electric-powered supercharger, the first in a production car. It delivers 435 horsepower and 664 pound-feet of torque in case you need to pull



ALFA ROMEO GIULIA
QUADRIFOGLIO

ASTON
MARTIN
DB11



New Cars for 2017

The List

down any skyscrapers on your way to the school pickup circle. It's bolted to an eight-speed automatic. While the official release date is still up in the air, we expect the SQ7 sometime in the second half of next year.

R8: MIA in the States for the 2016 model year, this mid-engine supercoupe is back in all its naturally aspirated glory for 2017. Gone are the V-8 engine and manual transmission; a 5.2-liter V-10 paired with a seven-speed dual-clutch automatic transmission is the only powertrain for the second-gen R8. The V-10 comes in two states of tune, letting buyers choose between the 540-hp, 398-lb-ft V-10 in the standard R8 and the 610-hp, 413-lb-ft unit in the extra-cost R8 Plus. Both powertrains feed a special application of Audi's Quattro all-wheel-drive system that emulates a rear-drive vehicle. Lighter by a claimed 77 pounds, the R8 V-10 Plus also gets standard carbon-

ceramic brakes; carbon-fiber rear diffuser, front lip spoiler, mirror housings, and rear wing; and—for the first time ever in the U.S.—one-piece racing seats.

TT RS: The latest TT RS arrives stateside in the middle of 2017 as a 2018 model. A turbocharged, aluminum-block five-cylinder engine producing 400 horsepower and 354 pound-feet of torque should provide ample acceleration: Audi estimates a zero-to-60 time of 3.7 seconds. A seven-speed dual-clutch automatic is the only available transmission. A pair of large oval tailpipes, larger front air intakes, and a fixed rear wing differentiate the TT RS from lesser TTs. Although offered in both coupe and roadster versions in Europe, only the coupe body style will make the trip to the U.S.

Minor trim changes:

A3/S3, A6/S6, A7/RS7/S7, Q3, TTS

Unchanged: Allroad, Q5/SQ5, TT coupe/roadster

BENTLEY

Bentayga: Trumpeted as the "World's Fastest SUV," Bentley's big bruiser is finally here. Actually, Bentley's first SUV isn't all that huge. It's taller and wider than a Mulsanne but nearly 1.5 feet shorter. A new version of Bentley's W-12 engine makes 600 horsepower and 664 pound-feet of torque; a Speed version with a power boost is all but a given. Adaptive anti-roll bars let you (okay, not you; someone richer than you) throw the Bentayga into corners while still allowing the generous wheel articulation that helps make it shockingly capable off-road. The price is \$235,525, and you can spend more than half that again on a single option: a diamond-encrusted Breitling dash clock. If you skip that one, there are plenty of lesser options.

Continental GT: Bentley scratches out another 7 horsepower and 13 pound-feet of torque from

the 6.0-liter W-12 for the top-spec Continental Speed. New totals: 633 horsepower and 620 pound-feet. Also new for the Speed coupe and convertible: a Black Edition. It renders most of the exterior chrome in black, while offering lower-body aero bits and matching interior accents in red, yellow, Beluga, or Hallmark (which you might refer to as "grey").

Flying Spur: A new V-8 S trim has the sub-W-12 Spur sedan flying a little faster. The S wrings another 21 horsepower (for a total of 521) and 15 pound-feet of torque (now 502) from its twin-turbo 4.0-liter V-8, pushing its top speed to 190 mph, up from 183. Bentley retuned the suspension for greater athleticism and made carbon-ceramic brake rotors optional. The grille's mesh insert, rear diffuser, and wheels get the blackout treatment, and two-tone leather dresses up the interior.

Mulsanne: see first drive, page 050

AUDI TT RS COUPE





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With its extensive ribbing and soft taper, the nose of the new Audi coupe looks vaguely zeppelin-like.



Coupe, There It Is

Audi's new A5 and S5 are fine drivers but, suddenly, aesthetically challenged. *_by Davey G. Johnson*

First Drive

A little more than 10 years ago, when Audi trotted out the first A5 at the Geneva auto show, jaws dropped. It was a subtle yet undoubtedly lovely car, its soft curves suggesting rather than shouting. It was fine to drive, too, especially in manual-transmission S5 trim, where it took on the character of a quietly brutish assassin. The new 2018 A5 and S5 coupes lose much of that nuance.

The A5 seems as if it's trying too hard to get noticed, its aggressively furrowed hood pulled down over its squat grille. From the side, the original car's fine character line has been exaggerated into a wavy crease. Out back, the Audis' LED taillights look to be the victim of a hard kick to the rump. In short, the cars come across as a study after a masterpiece.

Inside, the visuals don't fare a whole lot better. Audi has elevated our expectations such that we are disappointed, perhaps unfairly, if every new car isn't a revolution. And here the interior, with its regulation silver-hued door and dash trim, seems uninspired. On the in-car technology front, both the A5 and S5 feature Audi's trick digital dash (it's growing on us) and offer a 3-D surround-sound system and 4G LTE connectivity. The digital pleasures, however, no longer wow. With BMW's and Mercedes-Benz's improvements in the infotainment space, the Audi

only roundly beats Cadillac's ATS and Lexus's RC in terms of pixelated gimcrackery that's readily usable by the driver.

On the road, one is hard-pressed to tell the difference between the A4 sedan and the A5 coupe; each offers a familiar dynamic lightness and zips forward with an easy goose of the 252-hp, turbocharged 2.0-liter four-cylinder. While Europeans get a range of gasoline and diesel powerplants, we get only the 2.0, paired with a seven-speed dual-clutch transmission.

CHARGED!
The S5's 354-hp 3.0-liter V-6 is fitted with a single twin-scroll turbocharger in place of the previous S5's supercharger.





NEW PERSPECTIVE ON THE ROAD



BY DEREK POWELL

Sometimes the best vacation you can take is just beyond your own backyard. As far as great American cities go, San Francisco packs quite a lot into a tiny footprint. Not only is it home to a unique combination of history, culture and white-hot tech, but right outside its city limits you'll find some of the most spectacular getaways. The only question is: Where to this time?

**"I CREST THE HILL
AND FIND MYSELF IN
ANOTHER WORLD."**

So here I am, crossing the Golden Gate Bridge one beautiful summer day. A quick exit right off the bridge and I'm climbing toward the Marin Headlands. I crest the hill and find myself in another world. The winding road is bracketed by lush green rolling hills on one side and a phenomenal ocean view on the other. To think—this is only minutes from a bustling metropolis. And I've only just started my journey.

[+] Comfortable, upscale interior; roomy trunk.

[-] No manual transmission option; the other Germans have caught up to Audi's cabin tech.

at the bottom of the powerband before the turbo spools up. The eight-speed automatic transmission fires off crisp, smooth shifts and generally chooses the right gear, though we did manage to catch it out at several corner exits. It's a good transmission for a grand-touring coupe, but not quite as perfectly predictive as Porsche's dual-clutch automatic.

The performance model also offers a more glued-down front end; the S5 tracks well and is easy to drive fast, though it's more of an autobahn bullet train than a back-road acrobat. Tight roads don't exactly upset the S5, but neither do they beckon it. Long, fast sweepers over extended days in the saddle seem to be the mission here, as we found the sporty coupe an exceptionally comfortable place to while away the hours.

So what to make of the new coupe's status in the pantheon? Four-ring loyalists would be better served by the practicality and cleaner aesthetics of the A4/S4, four-doors that sacrifice none of the coupe's dynamic pleasures. If, however, you're absolutely bent on style, might we point your eye toward the lovely new Mercedes C-class coupes from Stuttgart?

Step up to the S5 and things change. Gone is the old supercharged 3.0-liter V-6, in its stead a heavily revised version of the 3.0 wearing a single twin-scroll turbo-charger in its vee. Audi claims that the engine, which makes 354 horsepower and 369 pound-feet of torque, features 800 parts that differ from the prior engine's. Despite power increases of 21 horses and 44 pound-feet, the feeling on the road is much the same, a kind of Kundalini-rising effect, though we found a slight dead spot

2018 Audi A5/S5

VEHICLE TYPE: front-engine, all-wheel-drive, 4-passenger, 2-door coupe

BASE PRICE: \$44,000–\$56,000 (est)

ENGINES: turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 252 hp, 273 lb-ft; turbocharged and intercooled DOHC 24-valve 3.0-liter V-6, 354 hp, 369 lb-ft

TRANSMISSIONS: 7-speed dual-clutch automatic with manual shifting mode, 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 108.8–108.9 in

LENGTH: 184.0–184.7 in

WIDTH: 72.7 in

HEIGHT: 53.9–54.0 in

TRUNK VOLUME: 16 cu ft

CURB WEIGHT: 3600–3800 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 4.4–5.7 sec

ZERO TO 100 MPH: 11.1–16.1 sec

1/4-MILE: 13.0–14.2 sec

TOP SPEED: 130–155 mph

FUEL ECONOMY (C/D EST)

EPA COMBINED/CITY/

HWY: 22–27/19–24/

29–31 mpg

The Bentley Mulsanne looks timeless even with timely updates. This updated version comes with a good measure more shininess up front.



Heir Time

Although updated, the 2017 Bentley Mulsanne reassures the world's elite with its constancy. *—by Joe Lorio*

First Drive

For the really rich, what's truly scary is the prospect of not being rich anymore. Thus the attraction to things that suggest permanence: diamonds, houses that look as if they've been around for centuries, hair implants. The Bentley Mulsanne is like a manor house on wheels, a whiff of British peerage that no doubt appeals to people whose greatest fear is becoming a regular schmo.

Regular schmoes don't buy Mulsannes. The least expensive version starts at about \$310,000, and the car can top \$400,000 with extras. The Mulsanne's solidity, heft, and constancy convey a sense of immutability, despite some revisions for 2017.

The biggest among them is the addition of the Mulsanne Extended Wheelbase, 25 copies of which are headed stateside for 2017. We only rode in the back of it, as will most owners. With a wheelbase longer by nearly 10 inches than a standard Mulsanne's and airline-style seats boasting extendable legrests, the rear compartment is extra luxurious. It also features tables that deploy from the full-length console, and a fridge with champagne-flute holders is optional.

The MEW model shares the changes visited upon the "regular" Mulsanne and

the Speed: a new hood and fenders, as well as a wider grille, full-LED headlamps with an adaptive beam pattern, and a redesigned lower fascia. The rear bumper is reshaped, and the taillamps feature a "B" graphic that's repeated in the front-fender vents.

A solid metal handle opens the heavy door, revealing a familiar cabin with leather everywhere, a meaty hunk of high-gloss wood capping the door panels, matching veneers on the dash and console, and fold-out tables in the seatbacks. The seats, however, are newly designed and have removable 10-inch Android tablets that rise out of the front seatbacks. They can control various functions in the car and run a slew of apps via a 4G Wi-Fi hotspot. Up front, the center display is now a touchscreen. It's 8.4 inches large but is still dwarfed by the units in other luxury cars.

The driving experience is also familiar, as the turbocharged 6.8-liter V-8 dates back 60 years. Last revised for 2015, its 505 horsepower and 752 pound-feet, more than

2017 Bentley Mulsanne

VEHICLE TYPE: front-engine, rear-wheel-drive, 4- or 5-passenger, 4-door sedan

BASE PRICE: \$310,395–\$367,225 (est)

ENGINE TYPE: twin-turbocharged and intercooled pushrod 16-valve V-8, aluminum block and heads, port fuel injection

DISPLACEMENT: 412 cu in, 6752 cc

POWER: 505 or 530 hp @ 4000 rpm

TORQUE: 752 or 811 lb-ft @ 1750 rpm

TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 128.6–138.4 in

LENGTH: 219.5–229.3 in

WIDTH: 75.8 in

HEIGHT: 59.9–60.7 in

PASSENGER VOLUME: 107–119 cu ft

TRUNK VOLUME: 16 cu ft

CURB WEIGHT: 6000–6100 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 4.8–4.9 sec

ZERO TO 100 MPH: 12.0–12.1 sec

1/4-MILE: 13.5–13.6 sec

TOP SPEED: 184–190 mph

FUEL ECONOMY EPA COMBINED/CITY/HWY: 13/11/18 mpg



adequate for a fast Brexit of your own, are again sent rearward via an eight-speed auto. Throttle tip-in is extraordinarily smooth, enhancing the sense of effortless acceleration around town. On the autobahn, it quickly steamed from 90 to 140 mph with no downshift required.

Of course, with the engine's torque peak at 1750 rpm, and redline a diesel-like 4500 rpm, there's no point in revving it. Nor is there much to be gained from the Speed's additional 25 horsepower and 59 pound-feet of torque, but those who reflexively buy the pricier model will choose it anyway.

Tire noise is eerily absent at highway speeds—the tires come with sound-absorbing foam liners—leaving just wind noise. On two-lane roads, though, the only indicator that you're moving is the passing scenery, and bumps are more rumored than felt. Despite the isolation, the hydraulically assisted steering's heft and precision make placing the car surprisingly easy.

Electronic driver aids, however, are glaringly absent, save for adaptive cruise control and, new for 2017, blind-spot monitoring. So it's no Tesla. Despite its updates, the Mulsanne remains resolutely analog. Steeped in tradition, it focuses on luxury that endures—just as its owners hope their fortunes will.

NEW PERSPECTIVE

ON THE ALL-NEW 2016 CHEVROLET CRUZE

The 2016 Cruze is like that best friend who's up for adventure at a moment's notice, the one you always speak to in shorthand because you know each other just that well. That intuition is a big part of the Cruze experience. Available keyless entry and ignition mean you're ready to get on the road in seconds. This is a car that can keep up with a hectic lifestyle. The all-new 1.4L turbo engine with 153 hp provides ample scoot all while offering up to an EPA estimated 42 MPG highway.¹ Premier model shown with an EPA-estimated 40 MPG highway.

At the top of the Marin Highlands, you can see practically everything. In the distance, the bridge cables swoop down to offer an unobstructed view of San Francisco. Turn around and it's nothing but open space. The earth reluctantly shares room with a strip of pavement just wide enough for one car. Then the road carves out through a series of switchbacks, with each one seemingly tighter than before. It's a journey worth taking even if you have no destination in mind. The available 18-inch wheels on the Cruze offer plenty of grip to ace these turns with absolutely zero drama.

It's still foggy when I reach the

**“THE CRUZE IS
LIGHTWEIGHT AND
AGILE, SEEMINGLY
READING YOUR MIND
AS YOU TURN.”**

edge of the city, and with the windows up and available sunroof closed, the inside of the Cruze is quiet and refined. The transition from city to countryside meant a glide across the Golden Gate Bridge—a stunning combination of human ingenuity and Mother Nature. Its iconic shape and color stand out in bold ochre contrast against the grassy knolls of the Highlands ahead and the dizzying blue water down below.

And the challenge of driving in San Francisco is that navigating it is half the fun. Streets are set at impossible angles and spirited drivers are every bit as ambitious as the pigeons that dart in front of you. The Cruze is lightweight and agile, seemingly reading your mind as you turn, with electric power steering that's communicative and precise.

¹EPA-estimated MPG highway for Cruze LS/LT with 1.4L 4-cylinder engine and 6-speed automatic transmission.



New Cars for 2017

The List

BUGATTI
CHIRON

BMW

i3: The lithium-ion battery pack in BMW's funky EV runabout grows from 22 kWh to 33, which means an increase in rated range from 81 miles to 114. And because qualifying as a zero-emissions vehicle in California requires that a car such as the i3—which offers an optional range-extending gas engine—have greater range on electric power than it has on gas, the larger battery means the BMW can now offer buyers opting for the

range extender an extra half-gallon of fuel capacity. Actually, BMW previously “limited” the tank amount by shutting off the fuel pump after 1.9 of the tank’s 2.4 gallons were gone. So the fuel tank remains the same, but the pump now gives you all of it. Seriously, we are not making this up.

X4: The new M40i trim level replaces the xDrive35i. Like the rest of BMW’s SUV lineup, the X4 M40i sticks with the older, N55-generation inline-six. In this application, the engine makes 355 horsepower and 343 pound-

feet of torque, up from an even 300 for both in last year’s 35i. The suspension is stiffer, the all-wheel-drive system is recalibrated, and a sport exhaust system is fitted. Gray exterior accents and unique M trim inside set the M40i apart.

5-series: An all-new 5-series is expected to emerge later this year or early next as a 2017 model. It will share some chassis and powertrain components with the 7-series, and the M5 will push more than 600 horsepower to all four wheels.

Minor trim changes: i8, 2-, 3-, 4-series

Unchanged: Alpina B6, Alpina B7, M2, M3, M4, M6, X1, X3, X5/M, X6/M, 6-, 7-series

Dead: Z4 (expect the next-gen car—which is being co-developed with Toyota—to debut for the 2018 model year)



B46, B58, Whatever It Takes: All body styles of the BMW 2-, 3-, and 4-series now carry the new-generation B46 inline-four and B58 inline-six. The four-cylinder is rated at 248 horsepower and 258 pound-feet of torque while the six makes 320 horsepower and 330 pound-feet. In the 2-series, six-cylinder cars are branded as “M Performance” models and get an additional 15 horsepower and 39 pound-feet of torque, for totals of 335 and 369.

BUGATTI

Chiron: This new Bugatti hypercar is more for people who park money in the Caymans than for those who would park a Porsche Cayman in their garage.

At \$2.6 million and limited to just 500 examples, the Chiron, with 1500 horsepower, is a literal and figurative investment vehicle. Should Chiron investors actually take to the road, they’ll find a familiar formula that was first introduced in the 2005 Veyron: A quad-turbo 8.0-liter W-16 turns a seven-speed dual-clutch transmission that drives all four wheels, which propel the carbon-fiber-and-leather bunker to ridiculous feats. Yes, the Chiron (it rhymes with “get out of my way, peon”) is essentially a highly evolved Veyron. The technology may not be as stunning as it was a decade ago, but the excesses are now even more excessive. Claimed top speed is up to 261 mph, and the zero-to-60 launch should rival the Porsche 918 Spyder’s 2.2-second feat. Bugatti should have no problem finding buyers, if for no other reason than the Chiron is far prettier than any Veyron. The C-shaped side coves and the center spine that splits the rear window evoke the 1936 Type 57SC Atlantic. Bugatti can take pride that its car no longer looks like a very fast potato.



THE FULL PERSPECTIVE

ENTHUSIASTS CAN FEEL CONFIDENT RECOMMENDING THE ALL-NEW 2016 CHEVY CRUZE. HERE'S WHY:

A compact car doesn't have to mean fewer features. The 2016 Cruze packs quite a lot into a small footprint, earning its Premier designation with options typically found only in luxury cars.

Let's start inside. An available navigation system features crisp, detailed graphics with an intuitive pinch-to-zoom capability. Power windows and optional sunroof open with a single touch of a button. Heated seats are available not only in the front, but also in back. No more squabbling about who sits where on ski trips.

"WELL-DEFINED LINES ACTUALLY ADD CHARACTER TO THE SHEET METAL, WITH SCULPTED CREASES CREATING A BOLD, AGGRESSIVE LOOK."

The Cruze also doubles as a mobile office, with an available built-in 4G LTE Wi-Fi ¹ hotspot—meaning the days of searching for a Wi-Fi connection are over. And since tech is hungry for power, the available 110-volt power outlet makes practically any device mobile. If you need to charge a laptop or a camera battery on the go, this option is a lifesaver.

A walk around the Cruze reveals a design that's both spirited and sophisticated. Well-defined lines actually add character to the sheet metal, with sculpted creases creating a bold, aggressive look. The Kinetic Blue Metallic paint is a perfect complement, resulting in a car that truly stands out.

The Cruze offers an expanded range of available active safety technologies. Lane Keep Assist can warn you if you unintentionally drift from your lane and gently helps you steer the vehicle back into the lane if you don't take action. Forward Collision Alert helps you to stay safe with two warnings, a Tailgating Alert to let you know if you are following another vehicle too closely, and a Crash Imminent Alert to signal when you're approaching a vehicle too quickly, so you can take action. Safety features are no substitute for the driver's responsibility to operate the vehicle in a safe manner. The driver should remain attentive to traffic, surroundings and road conditions at all times. Read the vehicle Owner's Manual for more important safety information.



¹Requires a compatible mobile device, active OnStar service, and data plan. 4G LTE service available in select markets. Visit onstar.com for coverage map, details and system limitations.

For more information visit chevrolet.com/cruze.



New Cars for 2017

The List

BUICK

Encore: Buick's wee crossover receives a restyled nose and various nips and tucks to make it look slightly less like a chrome-plated dinner roll. A revised interior boasts improved materials, as well as a new dash and center stack. As with most new GMs, the Encore comes with standard Android Auto, Apple CarPlay, and 4G LTE connectivity with Wi-Fi.

Envision: Although top-spec versions of this China-built mid-size luxury crossover already hit our roads this year, the 2017 model year introduces lesser trims to the lineup. Positioned between the smaller Encore and the three-row Enclave, the Envision is handsome if innocuously styled. Power comes from either a 197-hp 2.5-liter four-cylinder or a 2.0-liter turbo four with 252 ponies, both of which are hooked to six-speed automatic transmissions. Front-wheel drive is standard on 2.5 models,

and all-wheel drive is optional. Turbocharged Envisions are all-wheel-drive only and feature an active twin-clutch rear axle with torque-vectoring capability. Pricing starts around \$37,000 for 2.5-liter models, while turbos cost at least \$43,000.

LaCrosse: Buick's cushiest sedan gets a full redesign on a stretched version of the new Chevy Malibu's platform. Overall dimensions are about the same as before—save for 2.7 inches added to the wheelbase—yet curb weights are claimed to be nearly 300 pounds lighter. GM's latest 3.6-liter V-6 with 305 horsepower is the sole engine choice, and it's mated to an eight-speed automatic transmission. Front-wheel drive and 18-inch wheels are standard, but stepping up to the optional 20s yields adjustable dampers and the torque-steer-mitigating HiPer Strut front suspension. All-wheel drive also is available; that setup trades the fancy front

struts for a torque-vectoring rear axle. Along with shapely new bodywork, the LaCrosse receives a heavily reworked interior with lots of safety technology and soft-touch materials. Pricing ranges from \$32,990 to \$44,190 before options.

Verano: The Verano sedan briefly carries over for 2017 in 2.4-liter guise only and will be discontinued before the end of the year.

Minor trim changes:

Enclave

Unchanged: Cascada, Regal

CADILLAC

ATS: Cadillac is dropping the boat-anchor 2.5-liter four-cylinder base engine from its small sedan. The familiar turbocharged 2.0-liter is now the base mill with the 3.6-liter V-6 an option.

CT6: Cadillac will add a plug-in-hybrid version of its newest large sedan in early 2017. Launching this fall in China, where it will be built, the electro-CT6 pairs a turbocharged 2.0-liter four-cylinder engine with two electric motors yielding a combined output of 335 horsepower and 432

pound-feet of torque. Cadillac reckons that's enough juice to get the car to 60 mph in 5.3 seconds. Available only as a rear-driver, the plug-in should deliver about 30 miles of electric-only range and more than 65 MPG.

XT5: This two-row-crossover replacement for the SRX uses GM's new C1XX architecture, a shorter version of the platform that underpins the new GMC Acadia. It's powered by a 310-hp 3.6-liter V-6 bolted to an eight-speed automatic. Pricing starts at \$39,990 for a front-wheel-drive version and tops out at \$63,495 for an all-wheel-drive Platinum. It's just the start of Caddy's crossover-a-palooza over the next few years.

Minor trim changes:

CTS

Unchanged: Escalade/ESV, XTS

Dead: ELR, SRX

CHEVROLET

Bolt: see prototype drive, page 056

Camaro: The family grows with the addition of the supercharged ZL1 coupe and convertible, as well as the track-oriented 1LE that, for the first time,



BUICK
LaCROSSE



CADILLAC
XT5



Fade to Black: For 2017, Cadillac is getting all emo on us with its Carbon Black package, offering this special trimline on ATS/ATS-V sedans and coupes and the CTS/CTS-V sedan. On non-V models, the package includes dark-finish grille, side moldings, and wheels, as well as a spoiler, Recaro front seats, and carbon-fiber interior trim. On V models, it adds an available synthetic-suede-covered steering wheel and a carbon package with new hood-vent trim, a rear diffuser, a more aggressive front splitter, and a taller spoiler. And just to confuse matters, you can opt for the Carbon Black package with several different body colors.

can be had with a V-6 or a V-8. For the ZL1, Chevrolet taps the Corvette Z06 for its supercharged 6.2-liter V-8, installing it nearly unchanged save for a ceremonial 10-hp reduction (to “just” 640 ponies) to keep the Camaro in its proper place. A six-speed manual is standard while a new 10-speed automatic co-developed with Ford is optional. Some ZL1 magic trickles down to the V-8-powered SS 1LE: The two share some suspension components. The V-6 1LE, on the other hand,

uses the regular Camaro SS’s FE3 suspension. Both 1LEs come with extra cooling, wide tires, beefed-up Brembo brakes, and matte-black body accents. Recaro seats are available on the V-6 and standard on the V-8. The V-6 and V-8 make the same 335 and 455 horsepower, respectively, as in non-1LE Camaros, but a manual is the only transmission offered.

Corvette: The storied Grand Sport nameplate returns to the Corvette lineup for 2017, and as before, it is more or less a Z06 minus that model’s 650-hp supercharged V-8. Otherwise, Z06 wide-track bodywork wraps around the stock Corvette Stingray’s naturally aspirated 6.2-liter V-8 with a standard sport exhaust that bumps output by five ponies to 460 horsepower. The Grand Sport rides on essentially the same suspension as the Z06, and it borrows that beastly Vette’s Michelin Pilot Super Sport rubber (even stickier Sport Cup 2 tires are available with the Z07 package). This is a track-day special that feels special and goes like hell on a track.

Cruze: Fully revised last year, the Cruze sedan is joined by a hatchback for the first time in the U.S., while the Cruze Diesel model returns to the lineup—but only in the sedan. The hatchback shares its 153-hp turbo four and six-speed manual and automatic transmission options

with the sedan, but Chevrolet promises that the wagonoid Cruze will be tuned for more driving fun than the comfort-minded sedan. Cargo space is the hatch’s strong suit, with 19 cubic feet of volume behind the rear seats or 47 cubic feet with the second row folded. The diesel features an all-new 1.6-liter oil-burning four in place of its predecessor’s 2.0-liter, mated exclusively to a six-speed automatic.

Silverado 2500/3500

HD: Chevy’s heavy-duty pickups will come in for a few changes when the new model goes on sale early next year. A power and torque boost for the optional diesel engine is likely. And to feed that now-more-powerful compression-ignition lump, the hood will sprout a scoop.

Sonic: It trades its four-eyed, exposed-headlight look for a less weird—but also less distinctive—one and loses nearly half of its available trim levels. Only the LT and Premier trims remain on the hatchback,

while the Sonic sedan offers the same choices plus a base-model LS. Chevy now fits as standard the former RS package’s stiffened suspension, sport exhaust, and subtle body addenda to every hatchback for 2017. Nothing changes under the hood—the choices remain a 138-hp 1.8-liter four or a 1.4-liter turbo four with identical output but more torque.

Trax: Chevrolet’s mini-ute gets a minor styling overhaul that includes new headlights set into a more expressive fascia. The interior is similarly updated, with a new dashboard design and a seven-inch touchscreen with Android Auto and Apple CarPlay integration, as well as a 4G LTE data connection and Wi-Fi hotspot.

Minor trim changes:

Corvette Z06, Equinox, Silverado 1500, Traverse

Unchanged: City Express, Colorado, Express, Impala, Malibu, Spark, SS, Suburban, Tahoe, Volt

Dead: Spark EV



**CHEVROLET CRUZE
HATCHBACK**

NUTS ABOUT

GM resuscitates its electric-car dreams.

—by Don Sherman

—photography by Marc Urbano

2017 Chevrolet Bolt ▶

Peel back the Chevy Bolt's androgynous design and you'll find a car with more than its share of electrons. In case you haven't heard, this is a pure battery-powered electric with no combustion to drive you home when the juice runs low. But don't fret; thanks to its ample electron supply, the Bolt offers a claimed 200-mile range. There's also plenty of space for passengers and their stuff, and the Bolt's attitude is highly congenial. We discovered that last item on a 50-mile drive with the Bolt's chief engineer, Josh Tavel, riding shotgun, absorbing our barrage of questions.

Jab the accelerator and the Bolt makes good on its name. Chevy says it reaches 60 mph in less than seven seconds, which is quicker than every other pure electric we've tested except the BMW i3 and the Tesla Roadster, Model S, and Model X. That said, the seats of our pants suggest that seven seconds may be conservative. Right pedal down, this front-drive hatchback tears out of the hole and scratches for traction in bends. With 266 pound-feet of torque available at just above zero rpm and multiplied seven times by reduction gears, the Bolt has no difficulty going with the flow.

According to Tavel, the 200-hp motor's output had to be trimmed at times to diminish torque steer. While passing a tractor-trailer outside GM's Milford proving grounds, we feel exactly what he's talking about. Those who summon all the loose electrons for acceleration will need more than a couple of pinkies on the steering wheel.

Tavel is still tweaking various calibrations since Bolt production and sales are months out, but he's clearly proud of what his development team has achieved. This 37-year-old engineer began amateur competition at age five on BMX bikes and continued with minimal interruption to his current SCCA Spec

BOLT



Racer Ford campaign. A deeply ingrained racing mentality may be why Tavel hated to sacrifice any torque to diminish tugs on the steering wheel, and why the Bolt's every motion is well managed when you toss it around. Without imposing harshness, the ride is firm to help keep body roll in check during full-boogie maneuvers. The low-rolling-resistance Michelin Energy Saver A/S 215/50R-17 tires absorb patched pavement without recoil and break away gently when tasked with a surprise lane change.

Loaded with 3600 pounds of curb weight—56 percent carried by the front tires, according to Tavel—these radials have plenty of work to do, but they feel up to the task. The electrically assisted rack-and-pinion steering is slack-free on-center, quick to respond, and nicely weighted. Walking that fine line between comfort for civilian drivers and engaging dynamics for enthusiasts is no easy feat, but Tavel deserves credit for balancing the two conflicting mentalities.

Of course, he had plenty of help making sure that GM's latest electric-car project—following the EV1 in the 1990s, two generations of Volts, and the Spark EV—is a success. After collaborating since 2007 on OnStar communications modules, GM signed an agreement five years ago with Korea's LG Group to design and engineer electric vehicles. Nearly as large as GM in terms of annual revenue, the Life's Good brand is a world leader in chemicals, telecommunications, and electronics, so its expertise nicely complements GM's metal-bending and car-marketing skills.

The Bolt is truly global in scope, with GM Korea responsible for basic car design and U.S. engineers handling development. Drawing on its electric motor and control knowledge, GM engineers designed the propulsion system. LG builds the electric motor, power-inverter module, onboard battery charger, instrument cluster, infotainment system, and the control modules that distribute electrical power, energize the accessories, and communicate with charging stations. LG also manufactures the lithium-ion battery cells in Korea and assembles them into a pack.

When GM's president announced that the battery pack accounts for 23 percent of the Bolt's estimated \$37,500 base price (before federal tax credits), there was universal head scratching over any potential return on investment. Our guess: The value of zero-emissions credits to be reaped will exceed the inevitable per-unit losses.

The Bolt's 200-hp permanent-magnet AC motor has a hollow center so that one half-shaft can run straight from the differential to the right-front wheel. The 960-pound heated and cooled 60-kWh battery pack holds 288 cells in a 10-cubic-foot box that doubles as the Bolt's floor. The 3.9x15.3x0.5-inch prismatic cells

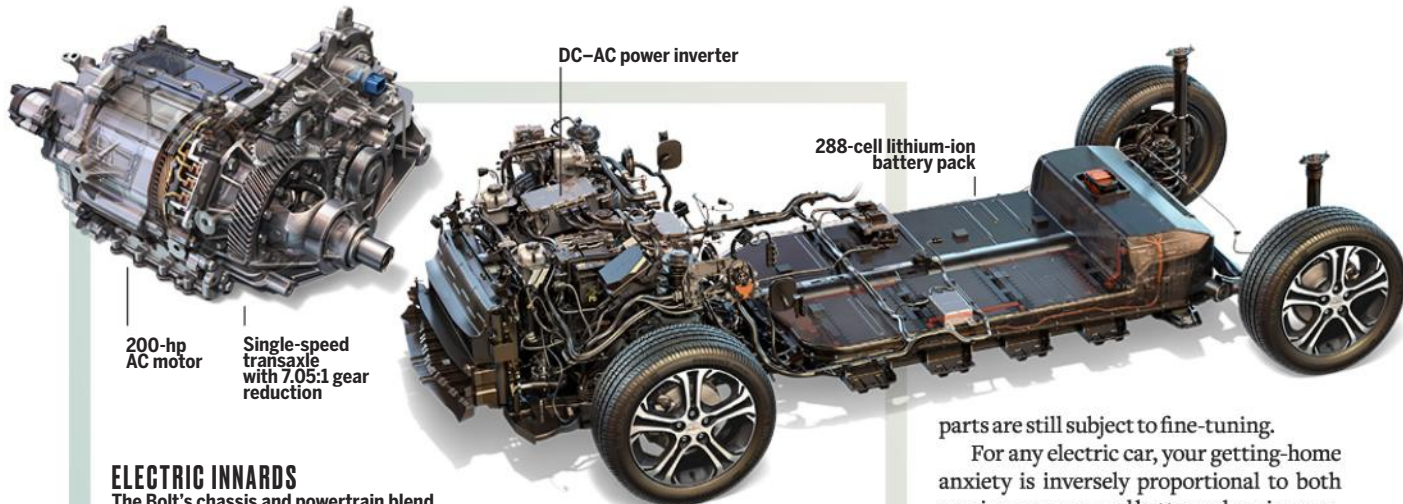


[+] Ample interior and cargo space, surprisingly fun to drive, cheapest 200-mile electric that money can buy. [-] Is it a crossover or a high-riding hatchback?

are packed inside 10 modules, four of which are stacked two high under the rear seat. Five support crossmembers, cooling plates, and the pack's steel bottom help avoid puncture by road debris. In all, the Bolt's pack carries more than three times the energy provided in the Volt's battery, but without ruining the interior space.

According to Tavel, at least 40 miles of the Bolt's 200-mile EPA-rated range (which we suspect is also a conservative claim) comes from regeneration, which necessitates recovering the maximum amount of energy during deceleration. Toward that end, there are four regenerative modes. The D shift-lever position stands for both drive and default. Those (like us) who prefer single-pedal electric-car driving will move the lever a notch back to the L position, significantly increasing regeneration down to zero mph. Behind the steering wheel's left spoke, there's a paddle to goose regen another notch higher in both the D and L positions. During our drive, the L position felt just right and comparable to the aggressive regen that Tesla provides. While the first bit of brake-pedal travel provides only regen, there's no weird step-up in effort when the four calipers swing into action as more pressure is applied.

In its roughly VW Beetle size, the Bolt offers ample room for passengers and stuff, as well as enough battery capacity for a claimed 200-mile range.



ELECTRIC INNARDS

The Bolt's chassis and powertrain blend GM design with LG manufacturing. Packing its batteries under the floor yields seating for five.

During the conceptual stages of the Bolt's design and development, GM asked potential customers what sort of vehicle they'd prefer. The near-universal vote was "crossover," which set the tone for this electric's general configuration. Frankly, we see little crossover vehicle in the Bolt's genes. All-wheel drive won't be offered at launch, and that's unlikely to change given the size and location of the battery pack. The Bolt's length and width dimensions fit neatly between the subcompact Chevy Spark's and the compact Sonic's. Adding three to four additional inches of height more than makes up for the battery pack in the floor: The tall ceiling and upright seating yield 94 cubic feet of passenger space and 17 cubic feet of cargo room behind the split-folding back seat. Both those figures top the Sonic's by a few cubic feet.

Yardsticks aside, the Bolt feels roomy, able to swallow everything short of four-by-eight building materials. Entering the front seat is a horizontal slide, with little up or down translation necessary. The rear bench is chair high with ample footroom, thanks to the flat floor, and minimal center-console intrusion. While there are three belts in back, there's only enough width to carry that many kids. Two adults fit nicely with the center armrest deployed. Front-bucket backrests are a thin design to maximize kneeroom, and there's a flat panel in the trunk with three-way versatility: It can be removed, mounted at an angle to segment cargo items, or placed flat over the subfloor cavity. Tavel pleaded no comment when we asked the purpose of the spare-tire-shaped well at the bottom of the cargo compartment. (In the event of a flat, tire sealant and re-inflation are your only salvation.) The obvious conclusion is that this new BEV2 platform has obligations beyond this car.

The Bolt's bright-eyed dash has a 10.2-inch reconfigurable touchscreen in the center and an eight-inch electronic cluster behind the wheel providing essential vehicle information. Even while the car is in drive, the inside mirror can display a wide-angle camera feed to improve rear visibility. An OnStar 4G LTE Wi-Fi connection provides access to the world at large. Android Auto and Apple CarPlay smartphone connectivity, automatic climate control, and a nav system specifically tailored to EV needs are all in the car we're driving, but Chevrolet hasn't announced exactly what gear and trim will be standard and what will cost extra. It's also too soon to judge fit, finish, and upholstery quality because those

parts are still subject to fine-tuning.

For any electric car, your getting-home anxiety is inversely proportional to both maximum range and battery-charging convenience. Plugging into a 120-volt outlet is convenient but ineffective for replenishing range within an average human's life span. The better choice is the optional 240-volt AC charger fed by a 32-amp circuit at home (or work), which, according to Chevy, replenishes 25 miles of range per hour and tops off a fully depleted pack in nine hours. Another option is SAE Combo DC quick charging that adds 90 miles of range in a half-hour. Compare that with a Tesla Supercharger, also DC, which adds 210 miles of range in only 40 minutes. At the beginning of this year, there were 253 Supercharger locations sprinkled across the continental U.S. versus 387 SAE quick-charge locations concentrated on the coasts. While that sounds like a win for Chevrolet, it's difficult to predict who will have the infrastructural upper hand when that other affordable electric, the Tesla Model 3, arrives in 18 or 24 or 36 or so months [see No. 19, page 030].

According to Tavel, Bolt manufacturing and deliveries are scheduled to begin before the end of this year, giving Chevy a solid start over the Model 3. Will the Bolt give Elon Musk night sweats? Or will the nearly 400,000 customers who've plunked down deposits for the next Tesla prove the wiser? We'll be back when that answer is in hand. ■

2017 Chevrolet Bolt

VEHICLE TYPE: front-motor, front-wheel-drive, 5-passenger, 4-door hatchback

BASE PRICE:

\$37,500 (est)

MOTOR TYPE:

permanent-magnet synchronous AC

POWER: 200 hp

TORQUE: 266 lb-ft

TRANSMISSION:

1-speed direct drive

DIMENSIONS

WHEELBASE: 102.4 in

LENGTH: 164.0 in

WIDTH: 69.5 in

HEIGHT: 62.8 in

PASSENGER VOLUME:

94 cu ft

CARGO VOLUME:

17 cu ft

CURB WEIGHT: 3600 lb

PERFORMANCE

(C/D EST)

ZERO TO 60 MPH:

6.9 sec

1/4-MILE: 15.3 sec

TOP SPEED: 91 mph

FUEL ECONOMY

(C/D EST)

EPA COMBINED/CITY/HWY: 100/105/95 MPGe



New Cars for 2017

The List

CHRYSLER

— **Pacifica:** Replacing the Town & Country minivan, this all-new entry to the family-busing segment is a reinterpretation of Chrysler's old "magic van." One engine is currently available: the familiar 3.6-liter V-6, good for 287 horsepower and mated to a nine-speed automatic. The EPA estimates 22 mpg combined, which puts it even with virtually every other sliding-door family hauler. A plug-in-hybrid powertrain will arrive later this year. Still able to accommodate either seven or eight passengers, the Pacifica offers all the benefits of a minivan but with striking looks to help mitigate the segment's largest foe: mom-car stigma. The interior harbors an abundance of sculpted shapes, large buttons, and Chrysler's intuitive infotainment system. But fear not, pragmatic breeders: Stow 'n Go seating remains,

combining the comfort of second-row captain's chairs (seven-passenger configuration) and the utility of a flat load floor without the burden of lifting seats out of the van. It's a true minivan, so even if some other road users might think you're in the family way, at least your back won't suffer.

— **Minor trim changes:**

200, 300

Dead: Town & Country

DODGE

— **Challenger:** Fiat Chrysler's fourth-generation Uconnect infotainment system features more processing power and now supports Android Auto, Apple CarPlay, and multi-touch gestures on its 8.4-inch screen.

— **Charger:** Dodge's big sedan gets the same upgraded infotainment unit as its two-door li'l bro.

— **Viper:** It's a bittersweet celebration of the Viper's

25th anniversary, as 2017 also marks the final year of production for the V-10 sports car that is equal parts sledgehammer and scalpel. Six special editions celebrate/mourn the occasion: the Snake-skin Editions ACR and GTC, the Dodge Dealer Edition ACR, the VooDoo II Edition ACR, the GTS-R Commemorative Edition ACR, and the 1:28 Edition ACR, a reference to the current production-car lap record at Mazda Raceway Laguna Seca of 1:28.65, which was set with the Viper ACR.

— **Minor trim changes:**

Durango, Grand Caravan, Journey

Dead: Dart

FERRARI

— **California T:** Earlier this year, Ferrari made available the \$8120 Handling Speciale package on its entry-level roadster, which is entry level only if you fly private. Spring rates increase, its MagneRide variable dampers get retuned, the

shift speeds are quicker, and traction control is tweaked to better accommodate drivers who want to, well, drive. Making it even more *speciale* are two mufflers that barely muffle at all under hard acceleration, resulting in three decibels more glory across the rev range.

— **GTC4Lusso:** see first drive, page 062

— **Unchanged:**

F12berlinetta, F12tdf, 488GTB, 488 Spider

Dead: FF

FIAT

— **124 Spider:** see comparison test, page 066

— **500/500 Abarth/500C:** We'd file these as minor trim changes, except Fiat is lowering prices of the gasoline-powered 500 lineup by up to 19 percent.

— **Minor trim changes:**

500L, 500X

Unchanged: 500E

Dead: 500 Turbo

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Lusso Fine

The GTC4Lusso replaces the FF in Ferrari's lineup. It's the old man's Ferrari, but where's the shame in that? *_by Josh Jacquot*

First Drive

That the 2017 Ferrari GTC4Lusso is at least one second faster around Ferrari's Fiorano test track than the wagonoid FF it replaces is rather meaningless. Partially this is because it's largely the same car. But it's also because, according to Stefano Varisco, the man responsible for the Lusso's vehicle dynamics and control systems, improving lap times wasn't a target for the Lusso. More to the point, the all-wheel-drive Lusso is very clearly a GT car, a machine made for triple-digit sweepers and deserted highways more than for Alpine paper-clip passes. Hot laps? They're in the Lusso's target range but certainly not in its cross hairs.

So it matters little when we find ourselves in a parade of tour buses, cyclists, and even sport bikes operating with churlish disregard for velocity while climbing a switchback in the Italian Alps. That a Ferrari should be so disrespected on its own turf is astonishing. That the indifference is demonstrated mostly by Germans on holiday is not. Possibly the route is Ferrari PR's disguised attempt to highlight the Lusso's greatest virtue: utter civility.

Ferraris, after all, are universally wedded to the expectation of noise. Not just noise, actually—soul-scorching symphonic theater. But the Lusso is quieter than the FF, especially at idle. Its exhaust is intentionally hushed, Ferrari claims, to better suit owners who will drive these cars daily. A 680-hp V-12-powered Ferrari lacking aural authority is as contradictory as a black fire truck with no hose. Which brings us to the point: This car is the heir to the FF, a Ferrari whose identity was always in question, torn between pragmatism and passion.

The Lusso fares better on style alone with more-aggressive rear fenders, sculpted sides, and a larger grille. Dimensionally, the two are virtually identical, both riding on a 117.7-inch wheelbase, 1.6 inches longer than

that of the new Porsche Panamera.

Still, it works. The Lusso doesn't make itself small on these roads; it just swallows them whole. There's nothing subtle here, but there is a calm confidence. Eminently stuck, the front tires follow every command from the lightly weighted wheel and, in turn, the rest of the big hatchback obeys. Don't think you're going to slide this car because it's not that kind of machine. If there's oversteer to be had, even at low speed, it demands the kind of input that often results in regret.

The V-12 delivers. Though it doesn't detonate the 2.1-ton Lusso from slow corners like, say, a Nissan GT-R, it pays off in an 8250-rpm swell that makes engines with half the cylinders feel like playthings. Shifting the seven-cog dual-clutch transmission at speed is hampered only by the occasional and infrequent need to find the column-fixed shift paddles. It is a wildly flexible thing, this V-12.

But the Lusso is not perfect. Its transmission vacillates counterintuitively in low-speed maneuvers where precision is required. The steering effort is so light that guiding it prudently can be challenging in some situations.

Still, three hours into our drive, after showing its taillights to every Iveco truck in the Alps, the truth about the Lusso is evident: Ferrari has created the world's best Porsche Panamera. Forget Germanic sto-

2017 Ferrari GTC4Lusso

VEHICLE TYPE: front-engine, all-wheel-drive, 4-passenger, 2-door hatchback

BASE PRICE: \$300,000 (est)

ENGINE TYPE: DOHC 48-valve V-12, aluminum block and heads, direct fuel injection

DISPLACEMENT: 382 cu in, 6262 cc

POWER: 680 hp @ 8000 rpm

TORQUE: 514 lb-ft @ 5750 rpm

TRANSMISSIONS: F: 2-speed automatic, R: 7-speed dual-clutch automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 117.7 in

LENGTH: 193.8 in

WIDTH: 78.0 in

HEIGHT: 54.4 in

CARGO VOLUME: 16 cu ft

CURB WEIGHT: 4250 lb

PERFORMANCE

(C/D EST)

ZERO TO 60 MPH: 3.3 sec

ZERO TO 100 MPH: 6.5 sec

1/4-MILE: 11.0 sec

TOP SPEED: 208 mph

FUEL ECONOMY

(C/D EST)

EPA COMBINED/CITY/HWY: 13/11/17 mpg

[+] Capable daily driver. Sounds like a Ferrari... at least at full throttle.
[-] Indecisive transmission.

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1997

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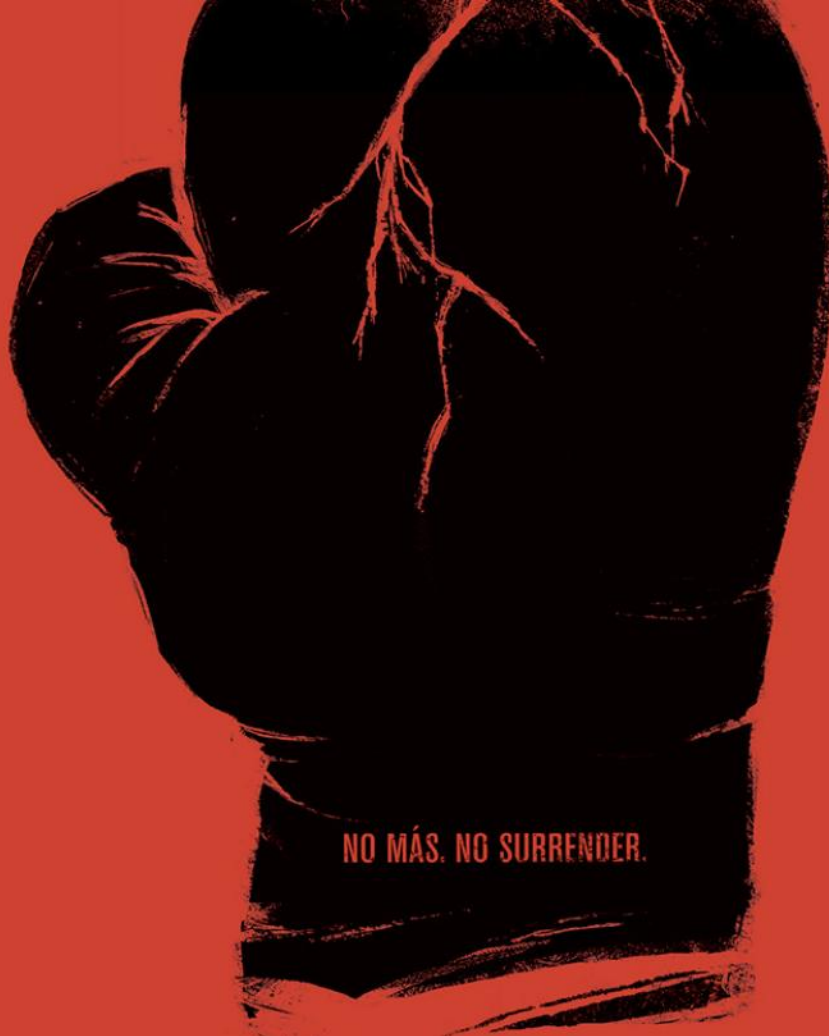
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icism; this four-seat, all-wheel-drive hatchback is dripping with Italian flourish. Yes, it has two fewer doors than a Panamera. So what? If you're really concerned about hauling four people, buy a Mercedes-Benz S-class. All hips and haunches, the Lusso is also approximately 100 percent easier on the eyes. So what if it's mostly quiet? Fully throttled, it's Monza in September. And it's fast.

The Lusso's V-12 gets higher compression from redesigned pistons. Coupled with equal-length six-into-one exhaust manifolds, the engine tweaks yield an additional 29 horsepower and 10 pound-feet of torque over the FF. The dual-clutch transaxle is unchanged and houses an electronically controlled limited-slip differential.

Though it's largely the same hardware used in the FF, the GTC4Lusso's finishing move is its unusual all-wheel-drive system that uses a two-speed gearbox driven directly off the crankshaft at the front of the engine to drive the front wheels. The two-speed's range is sufficient to cover the transaxle's first four gears. In fifth through seventh gears, the Lusso is rear-wheel drive. Clutches on each front half-shaft allow torque vectoring to each front wheel. A more efficient heat exchanger, a crucial upgrade from the FF, increases thermal capacity, permitting increased torque to the front wheels in dry conditions.

Rear-wheel steering is new to the Lusso. First introduced on the F12tdf, the system's response depends on a number of variables, but most of the time it steers the rear tires in phase (i.e., in the same direction) with the fronts. This strategy also makes the driver more confident by providing consistent feedback, according to Varisco. Out-of-phase rear steering, the kind that crabs the rear around corners, is reserved only for turn-in and limited to about 0.1 second

at a time to initially rotate the car.

Inside, the Lusso has gone full F1 with virtually every secondary control mounted on the steering wheel. That includes the ignition, headlights, turn signals, windshield wipers, the *manettino* performance-mode dial, and phone controls. There are roller switches on the back of the spokes to control audio volume and the instrument panel's configuration. And, in a nod to the reality of rough roads, there's a button that softens the magnetorheological dampers when the *manettino* dial is in sport.

Infotainment gets an upgrade with a new 10.3-inch touchscreen accompanied by a dedicated knob-and-button interface. Combined, they make quick work of audio, phone, and ventilation needs. The system is fast and intuitive and has usable controls—a rare trifecta, particularly among low-volume carmakers.

This is a nice interior, but not any nicer than you'll find in a Porsche at half the price. Stitched leather is everywhere, and the round air vents are stunning pieces of function and style. But the feckless flat-bottomed steering wheel is out of place in any car with more than one turn lock to lock. The rear seats are okay if the fronts aren't occupied by someone taller than six foot, but this isn't a place you'll find adults volunteering to ride—at least, not those who've already experienced a V-12 Ferrari.

The GTC4Lusso will cost around \$300,000 when it hits U.S. showrooms later this year. It's likely the most usable and civilized road car the company has ever made. But has its decency made it less virile? Less of a Ferrari? The answer comes as we switch off stability control, open the throttle, and bathe the Dolomites with the V-12's glory call. No, this is still a Ferrari. And it is a good one.

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Price: \$33,135 • Power: 155 hp
Torque: 148 lb-ft • Weight: 2316 lb
0-60 mph: 6.2 sec



The Fraternal Twins Face Off.

If buying an Italian car made in Japan sounds absurdly Fellini-esque, it's exactly the scene now unfolding at Fiat dealerships. Fiat's new 124 Spider is made in a Mazda plant in Hiroshima, on the same assembly line as the MX-5 Miata. Odd though it may sound, there's precedent. Legend has it that famous Italian trader Marco Polo brought pasta to Italy from Asia in the 13th century, and that, we can probably all agree, turned out fine.

The likenesses run deep in these two roadsters. Both have the same 90.9-inch wheelbase and unibody structure. The control-arm front- and multilink rear-suspension layouts are identical, except each has its own springs, dampers, and anti-roll bars. Here's more international intrigue: U.S.-based Fiat engineers aided in the 124's suspension tuning. Marco? *Polo!*

CLONES

by Tony Quiroga
photography by Greg Pajo

FIAT 124 SPIDER ABARTH

Price: \$37,870 • Power: 164 hp
Torque: 184 lb-ft • Weight: 2509 lb
0-60 mph: 6.7 sec



There's so much Miata in the 124 Spider that it's just easier to run through the differences. Under the hood, the Miata comes with a naturally aspirated 2.0-liter four with 155 horsepower and 148 pound-feet of torque. The 124 has an Italian-made turbocharged SOHC 1.4-liter four with 164 horsepower in Abarth guise (160 in regular strength) and 184 pound-feet of torque. A close relative of the Fiat 500 Abarth's engine, the 124's has four more psi of boost than the Cinquecento and is adapted for life in a rear-drive car.

Telling the two apart is easy. The Fiat is the one with the tacky Abarth badges that look big enough for a pickup. Longer by 5.5 inches than the Mazda, the Fiat has its own bodywork that borrows cues from the original 124 Spider. Built from 1966 to 1985, the 124 Spider's svelte namesake was as Italian as cappuccino and engine fires. Familial cues include the headlight cutouts, grille shape, and hood contours, plus the character line running down the Fiat's flanks.

There aren't many visible differences between the Italian and the Japanese inside; the 124 Spider has its own gauge faces, different door panels, some softer trim, and Fiat badges. Less obvious are the Fiat's acoustic windshield, thicker rear glass, and the extra sound deadening under the carpet and along the firewall. Those things add up. Take both to the scales, and the 124 Spider is a hefty 193 pounds heavier than the Miata.



To pick our favorite fraternal twin, we vectored toward the canyons north of Ojai, California, and one of our favorite roads, State Route 33. The site of an ongoing battle between blacktop and talus slopes, 33 inks through the browning vegetation of the Los Padres

Fiat's take on the Miata is a bit quieter, calmer, and more practical. But, despite its peak-power advantage, the Fiat is also slower and less fun to drive.

National Forest. It's best at dusk, right as the sun has its last dance with the canyons. With a car's top down, you can hear the exhaust echoing off the rocks and feel the heat from the road rising into the cabin and the dry air becoming satin. Driving doesn't get much better than this. But despite all their similarities, one of these roadsters is better than the other.

2. FIAT 124 SPIDER ABARTH

When you start with something as pure and good as a Miata, it's difficult both to improve on it and to completely muck it up. Fiat hasn't made a better Miata, but it hasn't ruined it, either.

Fiat's biggest misstep—adding power—actually seems like a good idea on paper. The reality is that the 1.4-liter turbo is a lag-filled look at the pitfalls of turbocharging. Below 2500 rpm, the engine appears to run on Sleepytime tea. A saunter from 30 to 50 mph in sixth gear takes 13.6 seconds, almost three seconds longer than the Miata's time, and only a half-second quicker than a manual Ford Focus with the 1.0-liter three-cylinder. Waiting this long is usually accompanied by an old issue of *People* magazine or *Highlights for Children*. And yes, we realize that any sentient driver would downshift when faced with such a delay, but our top-gear acceleration test does highlight the car's complete lack of motivation before the turbo wakes up.

Shifting the Fiat's six-speed was a pleasure, but then we drove the Mazda again. Fiat actually uses the previous-gen Miata's six-speed gearbox to cope with the turbo's torque. Throws are satisfyingly short, but the 124's efforts are higher than the Miata's. The clutch takeup is more abrupt, and the pedal requires greater leg strength.



Slip the stubby shift knob into lower gears, and there's still a wait. Even in first gear, pulling away from a stop requires patience. The 5-to-60 sprint requires 7.6 seconds, 0.8 second slower than the Miata. When the boost finally makes an appearance, it comes on all of a sudden. And that surge of acceleration tapers off quickly past the 5500-rpm power peak. Launched with a 4400-rpm clutch drop, the Spider will arrive at 60 mph in 6.7 seconds, a significant half-second behind the Mazda.

A Miata with torque is a concept we can get behind, but the Fiat's push comes with a price: a delay that accompanies every request for power. And while the Fiat is busy lighting its turbo fuse, the Mazda just bolts. Absent here are the Miata's direct responses and sense of urgency.

Abarth versions come with a less restrictive exhaust that helps add 4 horsepower versus the lesser Spiders. From directly behind, the quad pipes gurgle like a pygmy Dodge Viper's. From the driver's seat, there's a faint grumble, but the engine lacks the gravelly song of the Miata. At least the Fiat's generous insulation reduces the highway din. At a steady 70 mph, there's 75 decibels of noise, with the sound peaking at 84 decibels at full throttle. Loud compared with a family sedan, but quieter than the Miata, which is downright unpleasant when cruising at 80 mph.

The Fiat's chassis parts reduce body roll compared with the Miata, which is a bit jerkier on corner entry. Some of the Mazda's nervous energy has been massaged out of the 124's electrically assisted power steering. The Fiat reads as larger than the Mazda because of the extra weight, the toned-down responses, and the view over the longer hood. On the skidpad, the Fiat's 0.87 g of grip falls short of the Mazda's 0.89. But shut off the stability control and the Fiat will go from neutral to lurid drift with a small squirt of the gas. Few cars make being Ken Block easier.

Both cars came with identical and optional Brembo four-piston calipers in front and standard single-piston rear calipers. A firm and trusty pedal dials in the right amount of stop. Hauling down from 70 mph takes 171 feet in the Fiat and 175 in the Mazda. Different tires are likely to blame for the disparity. And blame our dusty desert test facility for the longish stops; our previous test of the Miata Club resulted in a 159-foot stop from 70 mph.

On the road, the Fiat rarely had to brake for traffic. We're guessing that Fiat's optional (\$1995) black hood stripe (which looks like a sticker, though Fiat assures us it is painted on) makes the 124 Spider look too much like Officer Friendly's car when seen through a rearview mirror. It's a modern miracle. The seas part. The Toyota Corollas move right.

Fiat 124 Spider Abarth
[+] Smoothed-out steering, drift happy, useful trunk, great seats, quieter than a Miata.
[-] Turbo ... delay, soft power, notchy shifter, affected styling.
[-] A customized Miata in need of a better engine.



	2017 FIAT 124 SPIDER ABARTH	2016 MAZDA MX-5 MIATA CLUB
PRICE AS TESTED	\$37,870	\$33,135
BASE PRICE	\$29,190	\$29,435
DIMENSIONS		
LENGTH	159.6 in	154.1 in
WIDTH	68.5 in	68.3 in
HEIGHT	48.5 in	48.8 in
WHEELBASE	90.9 in	90.9 in
FRONT TRACK	58.9 in	58.9 in
REAR TRACK	59.2 in	59.2 in
INTERIOR VOLUME	49 cu ft	49 cu ft
TRUNK VOLUME	5 cu ft	5 cu ft
POWERTRAIN		
ENGINE	turbocharged and intercooled SOHC 16-valve inline-4 83 cu in (1368 cc)	DOHC 16-valve Atkinson-capable inline-4 122 cu in (1998 cc)
POWER HP @ RPM	164 @ 5500	155 @ 6000
TORQUE LB-FT @ RPM	184 @ 3200	148 @ 4600
REDLINE/FUEL CUTOFF	6500/6700 rpm	6800/6800 rpm
LB PER HP	15.3	14.9
DRIVELINE		
TRANSMISSION	6-speed manual rear	6-speed manual rear
DRIVEN WHEELS		
GEAR RATIO:1/	1 4.36/4.7/31	1 5.09/4.7/32
MPH PER 1000 RPM/	2 2.35/8.6/58	2 2.99/8.1/55
MAX MPH	3 1.65/12.3/82	3 2.04/11.8/80
	4 1.26/16.1/108	4 1.59/15.0/102
	5 1.00/20.3/136	5 1.29/18.2/124
	6 0.84/24.2/125	6 1.00/24.3/131
AXLE RATIO:1	3.45, limited-slip	2.87, limited-slip
CHASSIS		
SUSPENSION	F: control arms, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: control arms, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar
BRAKES	F: 11.0-inch vented disc R: 11.0-inch disc fully defeatable	F: 11.0-inch vented disc R: 11.0-inch disc fully defeatable
STABILITY CONTROL	Bridgestone Potenza RE050A	Bridgestone Potenza S001
TIRES	205/45R-17 84W	205/45R-17 84W

CAR AND DRIVER TEST RESULTS

ACCELERATION		
0-30 MPH	2.2 sec	2.0 sec
0-60 MPH	6.7 sec	6.2 sec
0-100 MPH	18.8 sec	18.2 sec
0-110 MPH	24.1 sec	25.1 sec
1/4-MILE @ MPH	15.1 sec @ 92	14.8 sec @ 93
ROLLING START		
5-60 MPH	7.6 sec	6.8 sec
TOP GEAR, 30-50 MPH	13.6 sec	10.7 sec
TOP GEAR, 50-70 MPH	8.1 sec	10.6 sec
TOP SPEED	136 mph (drag ltd)	131 mph (drag ltd)
CHASSIS		
BRAKING, 70-0 MPH	171 ft	175 ft
ROADHOLDING, 300-FT-DIA SKIDPAD	0.87 g	0.89 g
WEIGHT		
CURB	2509 lb	2316 lb
%FRONT/%REAR	53.5/46.5	51.9/48.1
FUEL		
TANK RATING	11.9 gal	11.9 gal
EPA COMBINED/	91 octane	91 octane
CITY/HWY	30/26/35 mpg	30/27/34 mpg
C/D 400-MILE TRIP	24 mpg	25 mpg
SOUND LEVEL		
IDLE	50 dBA	48 dBA
FULL THROTTLE	84 dBA	90 dBA
70-MPH CRUISE	75 dBA	77 dBA

tested by TONY QUIROGA in California City, CA



We prefer the Fiat's supportive Recaro seats to the Mazda's lightweight units. But the Miata's clear-eyed focus on driving pleasure wins the day.

From other angles, the Fiat's longer overhangs and upright front end look awkward, but the extra 0.4 cubic feet of trunk space means that it can swallow another small bag. From behind, the Abarth's haunches and exhaust look mean until you notice the narrow tires. Someone skipped leg day.

As noted, not much separates the two roadsters inside. The Fiat does have Recaro seats that Mazda is considering offering. They are excellent and more supportive than the cheaper-feeling and softer ones in the Miata. Score one for the Fiat.

Does the Fiat come across as an Italian car? No, though a piece of black plastic trim did fall off the front bumper in a futile attempt to convince us otherwise. The 124 Spider strikes us as more like a heavily customized Miata than its own thing. We'll take the original.

1. MAZDA MX-5 MIATA CLUB

We fell hard for the Miata on that sunset drive down 33. Its slightly immature energy, somewhat annoying on a straight freeway, made us smile. Live-wire steering hurtles you toward apexes, and this car rolls over and wants to keep playing. The Miata never stops selling the case that smaller is better.

Mazda has built a modern car that amuses like an old car. To pull off this trick, the Miata eliminates the thick veneer of refinement we've become accustomed to in new machines. Fiat puts some of that veneer back—not enough to transform the car, but possibly enough to make it more palatable to customers who don't remember the good old days so fondly.

Without that extra layer of insulation, the Miata puts you closer to the machinery. The engine hums up front with a light burble from the intake. With the top down, the exhaust putters like that of an old Miata, which itself puttered like an MG. Shift efforts are lighter and more satisfying than in the Fiat. The clutch takeup is near perfect and easy to master.

Mazda MX-5 Miata Club
[+] Sharp handling, quick on its feet, purity of purpose.
[-] Nervous freeway manners, TOO LOUD.
[-] Alive with pleasure.

FINAL RESULTS

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2017 FIAT 124 SPIDER ABARTH
 2016 MAZDA MX-5 MIATA CLUB
Maximum points available

	RANK	1	2
VEHICLE			
DRIVER COMFORT	10	7	8
ERGONOMICS	10	7	7
TRUNK SPACE*	5	5	5
FEATURES/AMENITIES*	10	8	10
FIT AND FINISH	10	8	7
INTERIOR STYLING	10	8	8
EXTERIOR STYLING	10	9	7
REBATES/EXTRAS*	5	0	0
AS-TESTED PRICE*	20	20	17
SUBTOTAL	90	72	69
POWERTRAIN			
1/4-MILE			
ACCELERATION*	20	20	19
FLEXIBILITY*	5	4	3
FUEL ECONOMY*	10	10	9
ENGINE NVH	10	8	7
TRANSMISSION	10	10	8
SUBTOTAL	55	52	46
CHASSIS			
PERFORMANCE*	20	20	20
STEERING FEEL	10	9	9
BRAKE FEEL	10	9	9
HANDLING	10	9	9
RIDE	10	9	9
SUBTOTAL	60	56	56
EXPERIENCE			
FUN TO DRIVE	25	25	23
TOTAL	230	205	194

*These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.

With no turbo in the way, the 2.0-liter is far more responsive than the Fiat's 1.4-liter. Horsepower and torque rise in a smooth and linear manner. Even with a relatively green engine reading just 898 miles, the Miata still outpaced the more powerful Fiat to 60 mph and through the quarter-mile.

It didn't take us long to pick a winner. The Miata might be louder and jumpier than the 124 Spider, but it's also more charming and honest than the Fiat. And that means the Miata is a better sports car where it really counts. 🏆



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New Cars for 2017

The List

FORD

Escape: The Blue Oval's small SUV journeys into 2017 with new front and rear fascias that make it look more like the larger Edge. Inside, there's a subtle redo that moves the shifter, increases storage space, and brings the latest version of Ford's Sync infotainment system. The base 2.5-liter four carries over unchanged, but the rest of the engines are new or revised. A turbocharged 179-hp 1.5-liter four-cylinder replaces last year's 178-hp 1.6-liter four, and the 245-hp 2.0-liter turbo has five more horses and five more pound-feet of torque than before.

Fiesta: The hatch gets new front and rear styling while the sedan gets only the front-end refresh.

Focus: On the low end, the 123-hp 1.0-liter three-cylinder turbo engine can now be had with an auto. On the high end of the performance spectrum, the 350-hp Focus RS is for sale.

Fusion/Energi/hybrid: Now in the middle of its life cycle, Ford's mid-size sedan receives nearly imperceptible nose and tail jobs plus a refreshed interior. The gas and hybrid powertrains carry over from last year with one exception: the Fusion Sport, which gets a 325-hp 2.7-liter twin-turbo V-6 with 350 pound-feet of torque and standard all-wheel drive. Unfortunately, there's no manual transmission, but the Sport is likely capable of a five-second run to 60 mph. For those who want more luxury in their Fusion, there's a new top-trim level called Platinum, which adds quilted leather that's a dead ringer for the hides in Lincoln's fancy Black Label vehicles.

F-150: The return of the Raptor is nigh. Available as the four-door SuperCrew or the smaller SuperCab, this dune-jumping, dirt-smashing, high-performance pickup is probably what Robby Gordon drives to the opera. A new 10-speed

automatic connects to a heavily revised twin-turbo 3.5-liter V-6, promising more than 410 horsepower and more than 450 pound-feet of torque. Lesser F-150s will get the 10-speed automatic but a different version of the redesigned twin-turbocharged 3.5-liter V-6 with 375 horsepower and 470 pound-feet.

F-Series Super Duty: Ford's heavy-duty mule, the one intended for work, work, and work, is thoroughly redone for 2017. An aluminum body, like that of the F-150, sits atop a stiffened steel frame with beefed-up axles and suspension components. The aluminum cab and box help reduce weight by a claimed 350 pounds. Adaptive cruise control, blind-spot monitoring, and lane-departure warning become available. Engine choices remain the same but boast more power. How much more? Ford won't say, but we expect the standard 6.2-liter V-8 will make more than 385 horsepower and 425 pound-feet of torque. The optional turbo-diesel 6.7-liter V-8 (\$8595) should make more than

440 horsepower and 860 pound-feet of torque. Both engines come with a six-speed automatic.

GT: Ford's Le Mans class-winning supercar goes into production in late 2016. The company is still saying the twin-turbo 3.5-liter V-6 will make more than 600 horsepower. The almost-entirely carbon-fiber GT will also carry a seven-speed dual-clutch transmission and race-car-style pushrod suspension.

Minor trim changes: Edge, Explorer, Mustang, Taurus/SHO, Transit, Transit Connect
Unchanged: C-Max/Energi, Expedition/EL, Fiesta ST, Flex, Focus Electric/ST, Shelby Mustang GT350/GT350R

GENESIS

G80: The former Hyundai Genesis becomes the Genesis G80 now that Hyundai has decided to create a stand-alone luxury brand. Along with the name change, the G80 also gets a healthier dose of standard equipment, including a bevy of driver-assist electronics



FORD F-150
RAPTOR



FORD GT
'66 HERITAGE
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New Cars for 2017

(adaptive cruise control, lane-keeping assist, automatic emergency braking, automatic high-beams, etc.).

G90: The G90 is effectively the replacement for the Hyundai Equus. It rides on a stretched G80 platform and shares its less-huge brother's available all-wheel-drive system and 420-hp 5.0-liter V-8. That's down 9 horsepower compared with last year's 5.0-liter, as the company has prioritized fuel economy and midrange torque over peak horsepower. The G90's base engine is a twin-turbocharged 365-hp 3.3-liter V-6, which is considerably more powerful than the G80's naturally aspirated 3.8-liter V-6. Both G90

engines bolt to an eight-speed automatic. At an overall length of 204.9 inches and riding on a 124.4-inch wheelbase, the G90 is essentially Mercedes-Benz S-class size and nearly 10 inches longer than the G80. Predictably, the G90 will be sumptuously appointed with every electronic doodad, convenience, distraction, and driver-assist feature you'd care to mention.

GMC

Acadia: After a decade of dedicated service, this three-row SUV gets a comprehensive overhaul for the 2017 model year. Formerly based on GM's large

Lambda platform (along with the Buick Enclave and the Chevrolet Traverse), the new lower-calorie Acadia gets all-new sheetmetal and shares its platform with the Cadillac XT5. The SUV is shorter in wheelbase and overall length by 6.4 and 7.2 inches, respectively, and GMC claims to have shaved an estimated 700 pounds from the previous model's curb weight. The brand anticipates that the optional 310-hp 3.6-liter V-6 (\$1095 on SLE and SLT, standard on All Terrain and Denali trims) will make up the bulk of sales, but a 194-hp 2.5-liter inline-four will serve as the base engine. Both engines are backed by a six-speed automatic transaxle; all-wheel drive is a \$2000 option across the board.

Sierra HD: While still unconfirmed, rumors of a beefier platform and a more powerful Duramax diesel engine for the heavy-duty Sierra have been swirling in Detroit

for months. Adding fuel to the fire is the recently released official photo depicting a Sierra HD Denali diesel with a large air intake fitted to the hood. With the pickup wars still escalating, it makes sense that GMC might be looking to add capability to its heavy-duty trucks.

Minor trim changes: Canyon, Sierra, Terrain, Yukon/XL
Unchanged: Savana

HONDA

Accord hybrid: Following a one-year hiatus to move production to Japan from America, Honda's mid-size gas-electric sedan is back with exemplary mileage ratings (48 mpg combined in EPA tests), plus a switch to a lithium-ion battery pack yielding more trunk space. It also sees additional standard safety gear and a base price of \$30,440.

Civic: The turbocharged 174-hp 1.5-liter engine is now offered with a six-speed manual trans-



GMC
ACADIA



HONDA
RIDGELINE

mission in coupe, sedan, and new four-door hatchback forms.

—
Clarity Fuel Cell: To expand its fuel-cell-powered sedan's interior into the mid-size realm, Honda stashed the stack and driveline under the hood and the compressed hydrogen tanks beneath the rear seats and cargo hold. Expect a 300-mile range, refueling in less than five minutes, a price of about \$60,000, and leases available for around \$500 per month. Arriving late this year, the Clarity will be available only at selected California dealerships, the lone state with a hydrogen-fueling infrastructure.

—
Odyssey: Details are scant, but a full overhaul is slated for Honda's minivan early next year.

—
Ridgeline: After a two-year break, Honda's mid-size pickup returns with a 280-hp 3.5-liter V-6, a six-speed automatic transmission, and a choice of front- or all-wheel drive. Unibody construction, a four-door cabin, under-bed

storage, and a tailgate that drops or swings to the side are the key features that made the leap to this second-generation pickup. In an attempt to make the Ridgeline look more like a conventional truck, Honda added an artificial cutline between the cab and the bed and ditched the previous sloped edges atop the bedsides. A 1584-pound cargo limit and a 5000-pound towing capacity won't stop owners from vacationing with a vengeance. Prices start just above \$30,000 and hit \$40,000 when the top trim is picked.

—
Unchanged: Accord, CR-V, Fit, HR-V, Pilot
Dead: CR-Z

HYUNDAI

—
Elantra: Sharply updated inside and out, this new four-door sedan made its debut this year as an early 2017 model. Its stiffened chassis is motivated by two new engines, including a 147-hp 2.0-liter four that's

bolted to either a six-speed manual (only available in SE trim) or a six-speed automatic. The Eco model's go parts include a turbocharged 128-hp 1.4-liter mated to a seven-speed dual-clutch auto that is expected to return 40 mpg on the highway. In our testing, it was actually quicker than the standard model.

—
Ioniq: This new sedan isn't Hyundai's first foray into electrified transportation, but the Ioniq is the company's biggest challenge yet to the likes of Prius and Volt. On one platform, Hyundai will produce a conventional hybrid using a 1.6-liter four-cylinder and a 43-hp electric motor; a plug-in hybrid that adds a significantly larger lithium-ion battery for EV-only driving; and an electric-only version with a 28-kWh lithium-ion battery and an estimated driving range of 110 miles. The engines of both hybrids are mated to a six-speed dual-clutch transmission. Each

version of the Ioniq has slightly different styling details, but all use the same basic four-door-hatchback envelope with a drag coefficient of 0.24. Hyundai claims that it will be the Ioniq's fun-to-drive character that will help differentiate it from competitors. The hybrid and electric versions will go on sale at the end of this year, the plug-in next fall.

—
Santa Fe/Sport: Both the three-row Santa Fe and the two-row Santa Fe Sport get the ol' facelift treatment with new front and rear fascias and the always-important addition of LED clusters. Both models also come with a host of new driver-assist items (rearview camera, adaptive cruise control, lane-departure warning, and automatic emergency braking) as well as new convenience features. Hyundai also has retuned the Sport's two four-cylinder options for slightly improved fuel economy and added a mode selector with sport, eco, and normal settings to all powertrains.

Minor trim changes:

Accent, Elantra GT, Veloster

Unchanged: Azera, Sonata/hybrid, Tucson

Dead: Equus, Genesis

INFINITI

—
Q50: see first test, page 076

—
Q60: Three years after the Q50 sedan made its debut, its sister coupe, the BMW 4-series—fighting two-door, has finally been redesigned. It carries the same engine options as the Q50: a turbo 2.0-liter four good for 208 horsepower, a twin-turbo 300-hp 3.0-liter V-6, and a 400-hp version of the 3.0. All-wheel drive is optional on all models. A seven-speed automatic is the only transmission. That's a shame, but at least it's a looker.

—
QX30: see comparison test, page 088

Minor trim changes:

Q70, QX70, QX80

Unchanged: Q30, QX50, QX60



HYUNDAI
IONIQ
HYBRID



Steer-by-Ire

A new generation of steer-by-wire for Infiniti's Q50 should soften some critiques; an updated engine should crush others. *_by K.C. Colwell*

First Test

there exists an Infiniti dealer with a sense of humor, a gritty-voiced “SUNDAY! SUNDAY! SUNDAY!” ad must be in the works.

This starts as an engine story. Late in the 2016 model year, Infiniti replaced the Q50's aging 328-hp VQ-series V-6 with a new twin-turbocharged 3.0-liter V-6. The so-called VR30 comes in two strengths: 300 horses for the entry model and 400 for the Red Sport. The two versions are fundamentally identical and share the same block, heads, and turbochargers.

Along with higher-capacity intercoolers, the 400-hp unit's turbochargers spin at up to 220,000 rpm, a speed Infiniti says is the fastest of any production V-6. They push 14.7 psi of boost.

The 400-hp engine is plenty strong, getting the Q50S to 60 mph in 4.5 seconds, quicker than a BMW 340i and a Cadillac CTS Vsport and matching the last Mercedes-Benz C450 AMG Sport (now replaced by the C43) we tested. This VR engine is loosely related to the old 3.7-liter VQ, which justly earned a reputation for harshness across its rev range. The new VR still lacks smoothness, but only near its 7000-rpm redline. At low rpm, the engine does an excellent impression of a velvety inline-six, and turbo lag is virtually nonexistent. With an EPA combined fuel-economy rating of 22 mpg, which also happens to be what we averaged, the 400 beats the old VQ's mark of 21 by just 1 mpg.

Our curiosity with Infiniti's Direct Adaptive Steer (DAS), what the carmaker calls its steer-by-wire system, continues into the second-generation version found here. It adds \$1000 to the Red Sport 400's \$48,855 base price. Under normal circumstances, there is no physical connection between the steering wheel and the steering rack. It made “disconnected steering” a literal term when it launched in 2014. About 15 percent of Q50 buyers opt for DAS, and Infiniti says most actually like it.

Steer-by-wire gives Infiniti engineers a blank sheet when it comes to tuning. From the center-stack menu, one can set steering ratio and effort to one of three modes (standard, sport, or sport-plus). While in

Saying “Infiniti Q50S 3.0t Red Sport 400” out loud makes us giggle. It's a new Infiniti with the name of a NASCAR race. And if

sport or sport-plus, one can also alter the steering response, or how the steering reacts just off-center, using one of three sub-modes (default, dynamic, or dynamic-plus), giving the driver seven discrete steering-behavior choices.

And though the big menu means there's probably something for most behind the Q50's wheel, we found perfection elusive. Standard mode is numb, the electronics filtering out all the wheel kickback you'd expect from, say, a pothole. We found sport-plus with the response set to default to do the best impression of a conventional—albeit heavily weighted—electrically assisted steering system. Feedback to the driver remains limited, but there is a smooth transition from on-center to turning, unlike in dynamic or dynamic-plus (which makes the steering darty). And in all modes there is still a disconnect between lateral loading and steering effort, particularly at the limit. Where a normal car's steering goes light, this tiller's resistance holds firm.

That said, DAS 2.0 is a major improvement over the original. On the skidpad, the Q50S posted 0.88 g. Its steering effort builds quickly and never diminishes, leaving a driver's butt to detect understeer before the car pushes off line.

While the engine delivers, the steering system is still at least a generation away from appeasing real driving enthusiasts. Perhaps that is why Infiniti makes it a stand-alone option. Plus, the ability to control so many aspects of a steering system gives DAS an advantage in the current footrace to autonomy, an effort that's generating nearly as much hot air as Infiniti's new turbos.

[+] Smoother, more powerful engine; conventional steering is standard.
[-] Steer-by-wire system.

2016 Infiniti Q50S 3.0t Red Sport 400

VEHICLE TYPE: front-engine, rear-wheel-drive, 5-passenger, 4-door sedan

PRICE AS TESTED: \$57,475

BASE PRICE: \$48,855

ENGINE TYPE: twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection

DISPLACEMENT: 183 cu in, 2997 cc

POWER: 400 hp @ 6400 rpm

TORQUE: 350 lb-ft @ 1600 rpm

TRANSMISSION: 7-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 112.2 in

LENGTH: 189.1 in

WIDTH: 71.8 in

HEIGHT: 56.8 in

PASSENGER VOLUME: 100 cu ft

TRUNK VOLUME: 14 cu ft

CURB WEIGHT: 3895 lb

C/D Test Results

ZERO TO 60 MPH: 4.5 sec

ZERO TO 100 MPH: 10.5 sec

ZERO TO 140 MPH: 22.6 sec

ROLLING START, 5-60 MPH: 5.0 sec

1/4-MILE: 13.0 sec @ 112 mph

TOP SPEED: 153 mph (governor limited)

BRAKING, 70-0 MPH: 165 ft

ROADHOLDING, 300-FT-DIA

SKIDPAD: 0.88 g

FUEL ECONOMY

EPA COMBINED/CITY/HWY: 22/20/26 mpg

C/D OBSERVED: 22 mpg

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New Cars for 2017

The List

JAGUAR

F-Pace: Jaguar's first SUV looks like an F-type in drag. Heavy drag. It's spacious enough for six-footers front and rear, and it packs nearly twice the cargo volume of a Porsche Macan. Initially, the F-Pace comes as the 340-hp 35t and the 380-hp S, but it'll get a 180-hp 2.0-liter four-cylinder diesel later this year. An eight-speed auto is the only transmission and all-wheel drive the only driveline layout. But the system shuttles power exclusively rearward until the front axle needs it, contributing to unusual agility for the class. The 35t starts just over \$43,000, the loaded S will command at least \$57,000, and the

late-arriving diesel will slide in at just over \$41,000.

F-type: see first drive of the 575-hp SVR, page 080

The F-type gets a new entry-level model that chops some \$5000 from the price. There's also a reconfigured trunk that increases stowage in the roadsters by the approximate volume of a David Baldacci novel.

XE: Sales finally commence this year for Jaguar's excellent BMW 3-series fighter. First up are the 240-horse turbo-charged four and the 340-horse supercharged V-6; the 180-hp diesel four-cylinder will come later in 2017.

XF: Redesigned for 2016, the XF also adds the

diesel late next year. As with the F-type, a new base model drops frivolities such as power-folding mirrors and a power-adjustable steering column to save buyers two grand. It should start below \$49,000.

Minor trim changes: XJ

JEEP

Grand Cherokee: Jeep's flagship adds a hard-core, off-road Trailhawk variant with an adjustable air suspension and 10.8 inches of ground clearance, as well as the Quadra-Drive II four-wheel-drive system, an electronic limited-slip rear differential, and the all-important red tow hooks. The corporate 295-hp Pentastar V-6

will be standard while the 3.0-liter EcoDiesel V-6 and Hemi V-8 will be optional. A matte-black hood decal and displays for suspension settings and wheel articulation are included, too. On the other side of the Grand Cherokee spectrum, the ultraluxurious Summit model gets a revised front fascia and an optional full-leather interior. The SRT version is unchanged; the 707-hp, Hellcat-infused Trackhawk is expected to arrive late next year as a 2018 model.

New compact crossover: While early details are scarce, Jeep will introduce an all-new small ute for 2017 to sit between the Renegade and the Cherokee.

Wrangler: The dictionary-definition 4x4 carries over for another year as we await the redesigned 2018 version. Expect the new one to feature an available pickup body, a turbocharged engine option, and lighter-weight construction.

Minor trim changes: Cherokee

Unchanged: Compass, Patriot, Renegade

JEEP GRAND CHEROKEE TRAILHAWK



JAGUAR F-PACE



LAMBORGHINI CENTENARIO



KIA

—
Cadenza: You may have forgotten about this proto-luxury, front-drive platform twin to the Hyundai Azera sedan, but the Cadenza enters its second generation for 2017. Give credit to Kia's California design studio for the new model, which sports more-butch sheetmetal, LED lighting galore, a full suite of optional driver aids, and two different grilles depending on which trim level you choose. The carryover 3.3-liter V-6 is tweaked to 290 horsepower and transmits torque to a new eight-speed automatic.

—
Forte: Besides dumping the base 1.8-liter for a 2.0-liter Atkinson-cycle four with its sails trimmed for efficiency, the Forte gets a minor facelift, some upgraded interior materials, and a few more optional luxuries, including swiveling headlights to illuminate corners.

—
Niro: Seeking to reinvent itself with a green

subbrand called Eco-Dynamics, Kia boldly launches this new compact crossover early in 2017 (possibly as a 2018 model). It's exclusively a hybrid with a targeted EPA combined rating of 50 mpg. A new 1.6-liter Atkinson-cycle engine developed for hybrid duty pairs with an electric motor in the six-speed dual-clutch automatic to make 146 horsepower and 195 pound-feet of torque. Juiced by a 1.56-kWh lithium-ion pack, the Niro is also a laboratory for exhaustive weight reduction, even employing a plastic brake pedal. It will give fans of the Prius family something they've never had: an SUV option.

—
Optima hybrid: As part of Kia's commitment to improving its fleet fuel economy by 25 percent by 2020, a new hybrid and plug-in hybrid are intended to further move the mileage ball. The 193-hp hybrid Optima crosses the 40-mpg barrier, and the plug-in hybrid, carrying a 9.8-kWh lithium-ion pack, offers up to 27 miles of

electric-only range and a total range of around 600 miles. An electronic "coach" can help the driver stretch the savings. Sharp eyes will spot the styling tweaks to the plug-in, including a grille with motorized shutters.

—
Sorento: The big crossover joins the driver-assistance wave with automatic emergency braking, a feature soon to be as common as round, black tires.

—
Soul: A turbo model of Kia's best-selling box, long rumored but as yet undelivered, should arrive late this year, probably with a 1.6-liter turbo engine making around 200 horsepower. It will sit above the 164-hp 2.0-liter now at the top of the spec sheet. Some exterior freshening is also due.

—
Sportage: An all-new fourth-gen Sportage arrived for 2017 with a spunky new face with two ice-cube trays of LEDs, a lot of sweat put into cabin comfort and ride sophistication, slightly larger dimensions, and a brawnier turbo option

that provides a 240-hp punch from its 2.0-liter four. The old 2.4-liter, now the base engine, makes 181 horsepower. Intensive interior detailing puts soft-touch materials everywhere, and the ride has been tuned for compliance—even in the sportier SX Turbo. All-wheel drive remains an option, as does a raft of driver safety aids, though prices can push into the mid-\$30,000s.

—
Unchanged: Forte Koup, Forte5, K900, Optima, Rio, Rio5, Sedona, Soul EV

LAMBORGHINI

—
Centenario: Lamborghini's latest seven-figure extravagance celebrates the 100th birthday of company founder Ferruccio, who did not celebrate his own 100th birthday because he's been dead for 23 years. Based on the Aventador, the Centenario carries a 759-hp V-12 that should be good for a 2.7-second run to 60 mph. Other notable kit includes center-lock wheels, rear-wheel steering, an active wing, and a diffuser that

consumes the entire rear end of the car. Sant'Agata will build a total of 40 Centenarios, split equally between coupes and roadsters, for roughly \$2 million each, although the entire run was sold to the company's best customers before the car was ever shown publicly.

—
Huracán: Late last year, the Huracán blossomed into a full-fledged model line with the addition of the Spyder and the cheaper, less powerful LP580-2 rear-wheel-drive variant. Lambo aficionados with a passion for aviation will be more interested in the new Huracán LP610-4 Avio, which deploys wings to take the car airborne as it approaches its 202-mpg top speed. Wait...no, the Avio is just a paint-and-options special edition with white or gray accents and stripes over one of five special exterior colors. Lamborghini intends to sell 250 Avios at \$246,800 apiece to people who think like Aaron Robinson—Lambos! Planes! Lambo-planes!—but enjoy a much higher net worth.

—
Minor trim changes: Aventador, Aventador SV



EFFIN'





2017 Jaguar F-type SVR▲

LOUD

*The extroverted looks
and addictive yowl
of the ultimate F-type,
the 575-hp SVR.*

_by Jared Gall



Spain is Europe's Southern California, home to a temperate climate and lumpy topography. Luckily for both us and the world's automakers, Europe's motorsports fanaticism has also littered the country with racetracks. And if you're going to properly exercise a car with a claimed 200-mph top speed, a controlled environment is a must. So there we were on Teruel's Motorland Aragón, a 3.3-mile circuit about three hours southwest of Barcelona, eyes up the track, scenery blurring, right foot and supercharged V-8 urging the new Jaguar F-type SVR toward 180 mph on the mile-long back straight. Which feels even faster when you're staring down the braking point for a 35-mph hairpin.

Top left: The SVR gets larger, aluminum shift paddles for easier paddling. Top right: Little-known fact—the SVR is powered by two Zero Halliburton cases.

SVR is Jaguar Land Rover's recently christened ultraperformance label, akin to AMG's Black Series. Confusingly, the cars are branded SVR though the engineering arm that produces them is called SVO, for Special Vehicle Operations. SVO's first product was the Range Rover Sport SVR, a 550-horse, 5400-pound SUV that somehow acquits itself surprisingly well on a racetrack. SVO's follow-up is this vastly more congruous F-type SVR, available as a coupe or convertible. Its 575-horsepower matches that of the limited-production Project 7, and its 200-mph top speed makes it the fastest Jaguar production car ever. (Only the coupe can hit 200; the convertible's Vmax tops out at 195. Both are governed for the sake of their specially developed Pirellis.)

In sketching out the necessary aero addenda, Jaguar's stylists tossed restraint out the window. Larger apertures in the front bumper gulp big air, while vents carved into the hood exhaust it. Openings in the wheel wells vacate high pressure through gills aft of the front wheels, helping to cut front-axle lift. A narrow diffuser and proud fixed wing keep the rear end planted at high speed. It's more than a little gaudy, but the splitter, the wing, and the gills help the F-type finally look as wild as it sounds. Indeed, the V-8 occasionally sounds as though its injectors are pumping the cylinders full of firecrackers.

But it doesn't actually sound all that different from the F-type R. Titanium and Inconel, a nickel alloy, replace steel in the SVR's exhaust. Inconel's greater heat resistance means less material can endure the same amount of heat. The pipes' walls are just 0.02 inch thick, equal to about five sheets of printer paper, saving 35 pounds. And the transverse muffler



that tucks behind the rear bumpers of other F-types gets chunked from the SVR in favor of a pair of resonators that allow for the fitting of a diffuser between them. All this grants the SVR's vocals a sharper edge, but the sound is still that of King Kong bellowing and thumping his chest at thousands of beats per minute.

In its base configuration, the SVR cuts 55 pounds from the R. Add the coupe's \$3200 carbon-fiber roof panel and Jaguar's \$12,000 carbon-ceramic brakes—15.7 inches in front and 15.0 out back, as opposed to 15.0 and 14.8 for the standard pieces—plus the lighter hood louvers and trim of the \$4000 Exterior Carbon Fiber package, and you get weight savings of 110 pounds compared with the R.

The other half of the power-to-weight ratio skews the balance even further. Adopting the engine calibration from the limited-edition Project 7, SVO turns the 5.0-liter supercharged V-8 up to 575 horsepower and 516 pound-feet, aided by revised intercoolers and the increased airflow from the hood vents and bigger holes in the front bumper. Those are bumps of 25 horsepower and 14 pound-feet over the R. Like the R, the SVR is available only with an eight-speed automatic and rear-biased all-wheel drive. Jaguar worked with Pirelli to develop a version of the P Zero just for the SVR; they're 0.4 inch wider than the R's front and rear, 265/35ZR-20 and 305/30ZR-20, respectively. With all four digging into the pavement, expect the SVR to hit 60 mph in just 3.3 or so seconds.

[+] Now has the looks to match its voice, a bargain for a 200-mph car. [-] \$20K more than the also-quick R model.

The carbon-fiber wing deploys at 60 mph in the convertible and 70 in the coupe. In its lowered position, it cuts drag by 7.5 percent compared with the F-type R and reduces lift by 15 percent. Deployed, the drag reduction drops to just 2.5 percent, but lift is cut by a massive 45 percent. That means that a smeared landscape and a more urgent bellow from the exhaust are the only indicators of mounting speed.

All the cars we drove in Spain had the carbon-ceramic brakes. As Aragón's straight blurs toward the braking point, we're grateful for their strong bite and easy modulation. And their increased thermal capacity is welcome insurance against the SVR's two-ton curb weight. The last R coupe we tested needed just 137 feet to stop from 70 mph, easily among the shortest we've ever recorded; expect the SVR's rubber to improve on that figure.

The SVR rotates more readily than the R, thanks to a softer front anti-roll bar and a firmer one out back. Jaguar tells us it

2017 Jaguar F-type SVR

VEHICLE TYPE: front-engine, all-wheel-drive, 2-passenger, 2-door coupe or convertible

BASE PRICE: \$126,945–\$129,795

ENGINE TYPE: supercharged and intercooled DOHC 32-valve V-8, aluminum block and heads, direct fuel injection

DISPLACEMENT: 305 cu in, 5000 cc

POWER: 575 hp @ 6500 rpm

TORQUE: 516 lb-ft @ 3500 rpm

TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 103.2 in

LENGTH: 176.2 in

WIDTH: 75.7 in

HEIGHT: 51.5–51.6 in

PASSENGER VOLUME: 52 cu ft

TRUNK VOLUME: 7/14 cu ft (convertible/coupe)

CURB WEIGHT: 4000–4050 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 3.3 sec

ZERO TO 100 MPH: 7.9 sec

1/4-MILE: 11.6 sec

TOP SPEED: 195–200 mph

FUEL ECONOMY (C/D EST)

EPA COMBINED/CITY/HWY: 18/15/23 mpg

wanted to shift the handling balance rearward, which was the last thing the initial run of rear-drive cars needed. Now that all V-8 F-types are all-wheel drive, that decision seems less crazy. In spite of all four wheels being driven, the SVR's abundant torque means it remains possible to steer the F-type with the throttle, but doing so is less frightening than before. Goose it and the tail flicks out, but as the driver countersteers and holds the throttle, torque that the rear tires can't use gets shuttled to the front axle, quickly pulling the car back into line. It's predictable and fun, if less lurid.

As we understand it, buyers might occasionally find themselves on public roads, too. Here, the SVR's adaptive dampers are a slight compromise, allowing occupants to be tossed a bit over large bumps. But the suspension displacements have no sharp edges, there are no extraneous oscillations, and the seats are all-day comfortable. The SVR certainly rides more comfortably and more like a normal car than most 200-mph machines.

It also costs less. In the ranks of the 200-mph club, the SVR is something of a bargain. Aside from outliers, such as the Dodge Charger SRT Hellcat, cars in the 200s tend to carry price tags in the 200s—or at least nearby. But the SVR coupe starts at \$126,945. The not-quite-200-mph convertible carries a base price of \$129,795. But here's the flip side of that comparison: The SVRs are some \$20,000 more expensive than their 550-hp R siblings. So it goes in the hair-splitting, higher-performance, special-edition stratum. Still, aside from the SVR's bragging rights as the fastest or most powerful Jaguar ever, there is an appeal to an F-type that finally looks the way it sounds: like it belongs on a track. ■



New Cars for 2017

The List

LAND ROVER

Discovery: On sale in late 2017, this give-me-my-name-back replacement for the LR4 will offer three rows of seating and the familiar stepped roofline. It is expected to be much lighter than the outgoing LR4, which was so heavy that when it hauled ass, it had to make two trips.

Discovery Sport: The littlest Landie now offers InControl Touch Pro, a 10.2-inch touchscreen infotainment complex that features smart-phone-like controls, app-like displays, app mirroring, and high-resolution graphics. There are also new driver-assistance and convenience options, as well as an Intelligent Dynamics package that includes adaptive magnetorheological dampers and sportier dynamic-mode chassis settings. The Tile app is now compatible with Land Rover's proprietary phone app. With it, you can slap small, square Bluetooth-enabled tags on stuff you

don't want to forget (your kid, for example, or your car keys) and the Disco Sport will alert you to their whereabouts. Finally, the new Dynamic Design pack allows us to type "Dynamic" again and brings alternate fascias, black exterior trim, and contrasting interior stitching.

Range Rover: The new SVAutobiography Dynamic model aims to bring Range Rover Sport SVR attitude and handling to a higher tax bracket by packaging the SVR's supercharged 550-hp V-8 in the short-wheelbase Range Rover. SVAD the Impessor also gets a revised suspension, as well as a laundry list of special interior and exterior flourishes. For the rest of the lineup, 19 new paint colors are available, as is InControl Touch Pro. The navigation system now incorporates a function that learns your regular routes, while freshly available technologies on both Range

Rovers and RR Sports include a tow-assist function that enables steering in reverse with the terrain-select knob; a low-traction launch function that limits torque; driver-fatigue monitoring; and automatic emergency braking. Oh, and Intelligent Speed Limiter, which reads traffic signs and ensures that you won't exceed the speed limit while it's activated. Fun.

Range Rover Evoque: The higher trims get InControl Touch Pro, while lesser versions get the unprofessional version, InControl Touch. That stuff is far less interesting than the introduction of the Evoque convertible, the world's first luxury droptop based on a British SUV that once offered a near-\$100,000 special edition designed by Posh Spice. The convertible's top can be lowered in 18 seconds at speeds up to 29 mph, while a half-hatch out

back provides access to nine cubic feet of storage. The drivetrain is the same turbocharged 240-hp four-cylinder and nine-speed automatic as found in tin-top Evoques. Pricing starts at \$51K, or about \$4000 more than the two-door Evoque.

Range Rover Sport: Redact the stuff about the SVAutobiography Dynamic from the Range Rover, and there you go.

Dead: LR4

LEXUS

GS: A limited-slip differential joins the options sheet for the rear-drive version of the GS350 F Sport.

IS: The IS comes in for its mid-cycle facelift this year, gaining an even gape-ier maw to go with its new bumpers, exhaust finishers, and taillights. LED headlamps now are standard on all models,

LEXUS LC500h



while F Sport versions get functional front brake ducts. Inside, a new 10.3-inch infotainment display is available. The powertrains are the same as last year's, meaning a turbocharged 241-hp four-cylinder for the IS200t, and a 3.5-liter V-6 making 255 horsepower in the IS300 and 306 horsepower in the IS350.

— **LC:** The successor to the late and unlamented SC430, the LC coupe goes on sale in the spring. Lexus won't call it a sports car, but it nevertheless incorporates lots of exotic materials and offers a stiffer body than even the LFA hypercar. The LC's exterior styling is both sinewy and extreme, with a massive grille and undulating sheetmetal that leads back to a pair of promi-

nent hips. And the cabin offers aesthetic delights unexpected from once-staid Lexus. We particularly like the interior door panels with their flowing lines and sculptural handles. The LC500 features a 5.0-liter V-8 producing 467 horsepower and 389 pound-feet of torque, hooked to a 10-speed automatic. The hybrid model, the LC500h, pairs a 295-hp 3.5-liter V-6 with two electric motors. Both motors can contribute to propulsion, though the smaller one is primarily a starter/generator. The LC500h's real party trick is a multistage transmission that combines a CVT and a four-speed automatic transmission to mimic a 10-speed automatic in manual mode. It also acts as further gear reduction

for the car's primary electric motor, improving operating efficiency. The upshot, according to Lexus, is a more natural-feeling hybrid system and fuel economy that could touch 40 mpg on the highway, as well as a zero-to-60-mph time that should be in the 5.0-second range.

Pricing for the gas model is expected to come in at about \$100,000 with an increase of less than 10 percent for the hybrid.

— **NX:** The front-wheel-drive versions of the NX200t and NX300h have been axed.

— **RX350/RX450h:** The basic front-drive hybrid is no longer available, but both versions of the best-selling RX now offer front-drive F Sport versions. You know, for added sportiness.

— **Minor trim changes:**

GS F, GX, LS, RC, RC F

Unchanged: CT200h, ES350/ES300h, GS450h, LX

LINCOLN

— **Continental:** On hiatus since 2002, the Continental name returns on a full-size flagship sedan for 2017. Based on a heavily modified version of the Ford Fusion/MKZ architecture, the new Continental rides on a longer wheelbase and boasts wider front and rear tracks than those of its donor chassis. The Continental's base engine is a 3.7-liter V-6 with 305 horsepower. Prices will start at \$45,485. A twin-turbo 2.7-liter V-6 with an estimated 335 horsepower and 380 pound-feet of torque lifts the price to \$50,690. Front-drive is standard; all-wheel drive is a \$2000 option. For those wanting even more power, the twin-turbocharged 400-hp 3.0-liter V-6 starts at \$60,105 with standard all-wheel drive. Top-spec Black Label

versions swell the price to the mid-to-high-\$60,000 range. Big and filigreed with chrome, the new Continental bears more than a passing resemblance to a Bentley, which buyers may like. There's not much Bentley inside the glitzy interior, but there are optional 30-way adjustable seats. Look for the Conti to arrive in showrooms this fall.

— **MKZ:** Lincoln's version of the Ford Fusion receives a new Continental-like nose. A twin-turbo 3.0-liter V-6 joins the lineup, bringing 400 horsepower and 400 pound-feet of torque when coupled with all-wheel drive (front-drive models have 350 horsepower). Inside, Lincoln replaced the haptic audio and climate controls with real buttons.

— **Minor trim changes:**

MKC

Unchanged: MKT, MKX, Navigator

Dead: MKS

Plus Safety: The ES and ES hybrid, GS and GS hybrid, IS, LX, and RX all get Lexus Safety System Plus as standard, which includes adaptive cruise control, auto high-beams, lane-departure warning, and pre-collision warning.

LAND ROVER
RANGE ROVER EVOQUE
CONVERTIBLE

LINCOLN
CONTINENTAL



THE
BEST TOTAL
ENGINE PROTECTION
YOU CAN GET

Shell
V-Power
NITRO+
Premium Gasoline

**THINK ALL PREMIUM FUELS ARE
THE SAME? THINK AGAIN.**

**Join the Fuel Rewards® program NOW and earn
rewards when you purchase Shell V-Power® NiTRO+.**



ALL MEMBERS EARN
10¢/gal* after every
8 gallon fill-up.
Sign up FREE at fuelrewards.com/earn10



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GUNK

Shell
V-Power
NITRO+
Premium Gasoline

Lower quality
premium
gasoline



Intake valve deposit results based on ASTM D6201

CORROSION

Shell
V-Power
NITRO+
Premium Gasoline

Lower quality
premium
gasoline

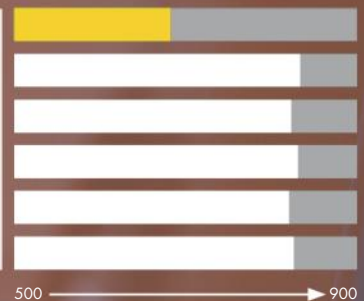


Corrosion results obtained by using ASTM D7548/D665

WEAR

Shell
V-Power
NITRO+
Premium Gasoline

Leading Majors Brands
Leading Regional Brands
Leading Grocers
Leading C-Stores
Leading Discount Retailers



Increasing amount of wear, microns

Wear results obtained using gasoline-modified HFRR ASTM D6079.

THE HATCHBACKS OF HAUGHTY CLAIMS

The high-riding luxury hatch squats into a smaller, more affordable segment.

—by Eric Tingwall

—photography by Marc Urbano



BMW X1 xDRIVE28i

Price: \$45,920 • Power: 228 hp
Torque: 258 lb-ft • Weight: 3721 lb
C/D observed: 27 mpg



AUDI Q3 QUATTRO

Price: \$43,090 • Power: 200 hp
Torque: 207 lb-ft • Weight: 3719 lb
C/D observed: 24 mpg



LEXUS NX200t F SPORT AWD
Price: \$46,550 • Power: 235 hp
Torque: 258 lb-ft • Weight: 4014 lb
C/D observed: 24 mpg



INFINITI QX30 AWD
Price (est): \$44,000 • Power: 208 hp
Torque: 258 lb-ft • Weight: 3534 lb
C/D observed: 25 mpg



MERCEDES-BENZ GLA250 4MATIC
Price: \$41,975 • Power: 208 hp
Torque: 258 lb-ft • Weight: 3517 lb
C/D observed: 26 mpg



Just as LeBron James, the Cleveland Cavalier forward, is far more likable than LeBron James, the Miami Heat forward, a hatchback called a crossover trumps a two-box vehicle by any other name. It's a matter of selling perception as much as a tangible product, and Americans have fully bought in.

With the crossover elbowing out the sedan as the vehicle of choice for the everyman, the smallest, most affordably priced premium utes now serve as the entrée to luxury-brand ownership. Simultaneously, the perpetual upward trajectory of vehicle sizes and prices has left a gaping hole for a class of tiny crossovers below the Audi Q5, the BMW X3,



and the Lexus RX. These smallest crossovers start around \$36,000, with all-wheel drive optional if not standard and a 2.0-liter turbo-charged inline-four the consensus powertrain.

BMW launched this burgeoning segment in the U.S. in 2013 with the X1, then completely rethought its approach three short years later. While the current X1 is only all-wheel drive (for the time being, at least), its dubious distinction as the first BMW in the States built on a front-wheel-drive architecture riles loyalists who cringe at the inevitability of front-drive BMWs. For this class, though, where driving dynamics take a back seat to comfort, convenience features, and, well, the back seat itself, it's hard to argue with BMW's decision. Our test car was loaded with \$10,125 worth of options, including a self-parking feature, a Harman/Kardon stereo, and a massive panoramic glass roof for a total of \$45,920.

You might expect Audi, no stranger to selling small premium cars in the U.S., to have an advantage in this particular game. The tall and stubby crossover kin to the A3, the Q3 is not yet based on the VW Group's newest MQB platform, though. Instead, it uses the older PQ35 architecture that dates to the fifth-generation VW Golf. Our Prestige-trim tester packed a power liftgate, power-folding mirrors, LED headlights, a Bose sound system, and a sport package with upgraded seats, handy shift paddles, and selectable drive modes for \$43,090.

The Lexus NX200t checks in almost 10 inches longer than the Audi and 500 pounds heavier than Mercedes' entrant, although the envelope doesn't feel significantly larger from the inside. While the NX is only Lexus's second unibody crossover, the brand is working from deep experience. The larger RX has been synony-

mous with luxury crossovers for 20 years. Our NX test car came with the F Sport cosmetics-and-seating package that only serves to make the front fascia more garish. An optional summer-tire package (not fitted to our test car) is the only F Sport mechanical change. Adaptive cruise control, real leather seats, a wireless phone charger, and a postage-stamp sunroof made the NX200t the most expensive vehicle in the test at \$46,550.

The Mercedes-Benz GLA250 claims the lowest as-tested price at \$41,975, with optional equipment including blind-spot monitoring, 19-inch wheels, a rearview camera, panoramic sunroof, and cross-drilled front brake discs. It is the closest thing to a literal hatchback-on-stilts in this test. To create the GLA, Mercedes designers simply massaged the roofline and character creases of Europe's A-class hatch and lifted the suspension. In another nod to American tastes, the seven-speed dual-clutch transmission is controlled by a column-mounted stalk, which leaves enough prime center-console real estate for a 7-Eleven-approved cupholder—right ahead of two more cupholders.

Infiniti's QX30 is the freshest design, all-new for 2017, although maybe not quite as new as it appears. Take a look at where the A-pil-



With the weakest acceleration, a mushy brake pedal, and a humdrum interior, the Q3 not only looks like a potato dumpling, it's about as spicy as one.

lar meets the hood and front fender, then check out the same stamping on the Mercedes-Benz. The QX30 is a product of a budding partnership between Daimler AG and Renault-Nissan. Built using the same platform and powertrain as the Mercedes, but assembled at Infiniti's Sunderland, England, plant with different sheetmetal, the QX30 follows the cost-conscious route into a price-sensitive category. And yet, at first glance our Premium-trim QX30 with an estimated as-tested price of \$44,000 certainly seems more luxurious than the GLA in this test based on material quality alone. Options included LED headlights, the bird's-eye Around View Monitor camera system, front and rear parking sensors, and the complete roster

of active safety aids.

We attempted to include a sixth competitor, but Lincoln could only provide an MKC with the optional 2.3-liter engine and a price tag in the mid \$50,000s. We passed on the MKC to keep the playing field as level as possible, then took to our 10Best route and Michigan's Old Mission Peninsula to find the most roller-coaster-like roads in the Mitten.

5. AUDI Q3

For a segment so green, the Audi Q3 feels surprisingly tired. That's because, although the Q3 only went on sale in the U.S. in 2015, the design predates the launch by three years. It originally made its debut in Europe for 2012. The dated interior is polka-dotted with a daunting array of buttons, and the driving experience is defined by underwhelming attributes that, frankly, we can't remember experiencing recently in a luxury vehicle.

Bad manners are headlined by a bouncy and busy ride, perhaps in part because the Q3 rides on the test's shortest wheelbase, although the suspension tuning doesn't help. The Q3 pitches and rolls on lumpy



Audi Q3

[+] Usable interior space, agreeable NVH.

[-] Busy ride, sloppy handling, bus-driver seating position.

[=] Unlike any other recent Audi.

	2016 AUDI Q3 QUATTRO	2016 BMW X1 xDRIVE28i	2017 INFINITI QX30 AWD	2016 LEXUS NX200t F SPORT AWD	2016 MERCEDES-BENZ GLA250 4MATIC
PRICE AS TESTED	\$43,090	\$45,920	\$44,000*	\$46,550	\$41,975
BASE PRICE	\$36,725	\$35,795	\$36,000*	\$39,415	\$35,425
DIMENSIONS					
LENGTH	172.8 in	175.4 in	174.2 in	182.3 in	173.9 in
WIDTH	72.1 in	71.7 in	71.5 in	73.6 in	71.0 in
HEIGHT	62.6 in	62.5 in	60.2 in	64.8 in	60.0 in
WHEELBASE	102.5 in	105.1 in	106.3 in	104.7 in	106.3 in
FRONT TRACK	61.1 in	61.5 in	61.7 in	61.8 in	61.4 in
REAR TRACK	61.2 in	61.6 in	62.0 in	61.8 in	61.4 in
INTERIOR VOLUME	F: 48 cu ft R: 36 cu ft	F: 53 cu ft R: 45 cu ft	F: 50 cu ft R: 39 cu ft	F: 53 cu ft R: 44 cu ft	F: 49 cu ft R: 38 cu ft
CARGO BEHIND	F: 48 cu ft R: 17 cu ft	F: 59 cu ft R: 27 cu ft	F: 34 cu ft R: 19 cu ft	F: 55 cu ft R: 18 cu ft	F: 42 cu ft R: 12 cu ft
POWERTRAIN					
ENGINE	turbocharged DOHC 16-valve inline-4 121 cu in (1984 cc)	turbocharged DOHC 16-valve inline-4 122 cu in (1998 cc)	turbocharged DOHC 16-valve inline-4 122 cu in (1991 cc)	turbocharged DOHC 16-valve inline-4 122 cu in (1998 cc)	turbocharged DOHC 16-valve inline-4 122 cu in (1991 cc)
POWER HP @ RPM	200 @ 6000	228 @ 5000	208 @ 5500	235 @ 5600	208 @ 5500
TORQUE LB-FT @ RPM	207 @ 1700	258 @ 1250	258 @ 1250	258 @ 1650	258 @ 1250
REDLINE/FUEL CUTOFF	6600/6800 rpm	7000/6500 rpm	6400/6300 rpm	6250/6250 rpm	6300/6300 rpm
LB PER HP	18.6	16.3	17.0	17.1	16.9
DRIVELINE					
TRANSMISSION	6-speed automatic	8-speed automatic	7-speed dual-clutch automatic	6-speed automatic	7-speed dual-clutch automatic
DRIVEN WHEELS	all	all	all	all	all
GEAR RATIO:1/	① 3.95/5.7/39	① 5.25/4.8/31	① 3.86/4.6/27	① 3.30/5.8/36	① 3.86/4.6/27
MPH PER 1000 RPM/	② 2.30/9.8/67	② 3.03/8.0/51	② 2.43/7.5/45	② 1.90/9.6/60	② 2.43/7.5/45
MAX MPH	③ 1.56/14.5/99	③ 1.95/12.2/79	③ 1.54/11.1/70	③ 1.42/13.4/84	③ 1.54/11.1/70
	④ 1.16/19.5/127	④ 1.46/16.5/107	④ 1.05/16.5/104	④ 1.00/18.9/118	④ 1.05/16.5/104
	⑤ 0.86/26.3/127	⑤ 1.22/19.7/128	⑤ 0.78/22.5/131	⑤ 0.71/26.3/126	⑤ 0.78/22.5/130
	⑥ 0.69/32.8/127	⑥ 1.00/24.0/129	⑥ 0.61/28.7/131	⑥ 0.61/31.0/126	⑥ 0.61/28.7/130
		⑦ 0.81/29.7/129	⑦ 0.48/37.0/120		⑦ 0.48/37.0/120
		⑧ 0.67/35.9/120			
AXLE RATIO:1	3.45	3.20	4.60	4.15	4.60
CHASSIS					
SUSPENSION	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar	F: struts, coil springs, anti-roll bar R: multilink, coil springs, anti-roll bar
BRAKES	F: 12.3-inch vented disc R: 11.1-inch disc	F: 13.0-inch vented disc R: 11.8-inch vented disc	F: 12.6-inch vented disc R: 11.1-inch disc	F: 12.9-inch vented disc R: 11.1-inch disc	F: 12.6-inch vented, cross-drilled disc R: 11.6-inch disc
STABILITY CONTROL	partially defeatable	fully defeatable, traction off	partially defeatable	partially defeatable, traction off	partially defeatable, launch control
TIRES	Continental ContiProContact 255/40R-19 100H M+S	Pirelli Cinturato P7 All Season Run Flat 225/50R-18 95V M+S	Continental ProContact TX SSR 235/50R-18 97H M+S	Yokohama Geolander G91 HV 225/60R-18 100H M+S	Goodyear Eagle LS2 RunOnFlat 235/45R-19 95H M+S

CAR AND DRIVER TEST RESULTS

ACCELERATION					
0-30 MPH	2.8 sec	2.4 sec	2.3 sec	2.3 sec	2.2 sec
0-60 MPH	7.8 sec	6.3 sec	6.6 sec	7.1 sec	6.1 sec
0-100 MPH	21.8 sec	17.1 sec	18.1 sec	20.5 sec	17.3 sec
0-120 MPH	38.8 sec	27.8 sec	31.4 sec	37.7 sec	29.5 sec
1/4-MILE @ MPH	16.1 sec @ 89	14.9 sec @ 94	15.1 sec @ 92	15.5 sec @ 89	14.8 sec @ 93
ROLLING START,					
5-60 MPH	8.2 sec	7.3 sec	7.2 sec	7.7 sec	7.4 sec
TOP GEAR, 30-50 MPH	4.0 sec	3.5 sec	3.4 sec	3.9 sec	3.4 sec
TOP GEAR, 50-70 MPH	5.5 sec	4.6 sec	4.7 sec	4.8 sec	4.5 sec
TOP SPEED	127 mph (gov ltd)	129 mph (gov ltd)	131 mph (gov ltd)	126 mph (gov ltd)	130 mph (gov ltd)
CHASSIS					
BRAKING, 70-0 MPH	174 ft	170 ft	163 ft	183 ft	173 ft
ROADHOLDING,					
300-FT-DIA SKIDPAD	0.85 g†	0.86 g	0.83 g	0.76 g	0.84 g
610-FT SLALOM	40.9 mph†	41.1 mph	40.2 mph†	39.0 mph†	40.5 mph†
WEIGHT					
CURB	3719 lb	3721 lb	3534 lb	4014 lb	3517 lb
%FRONT/%REAR	57.2/42.8	56.5/43.5	60.2/39.8	59.1/40.9	59.7/40.3
CG HEIGHT	25.0 in	23.5 in	25.0 in	25.0 in	25.0 in
FUEL					
TANK	16.9 gal	16.1 gal	14.8 gal	15.9 gal	14.8 gal
RATING	91 octane	91 octane	91 octane	91 octane	91 octane
EPA COMBINED/					
CITY/HWY	23/20/28 mpg	26/22/32 mpg	27/24/32 mpg*	24/22/27 mpg	27/24/32 mpg
C/D 600-MILE TRIP	24 mpg	27 mpg	25 mpg	24 mpg	26 mpg
PRACTICAL STOWAGE					
NO. OF 9 X 14 X 22-IN BOXES,					
SEATS UP/FOLDED	5/16	7/19	5/16	7/16	5/16
LENGTH OF PIPE	119.5 in	125.0 in	117.5 in	121.0 in	117.0 in
LARGEST FLAT PANEL,					
LENGTH X WIDTH	62.0 x 38.5 in	65.5 x 39.5 in	63.5 x 41.0 in	68.8 x 44.0 in	63.5 x 41.3 in
SOUND LEVEL					
IDLE	42 dBA	40 dBA	41 dBA	37 dBA	42 dBA
FULL THROTTLE	74 dBA	75 dBA	76 dBA	74 dBA	73 dBA
70-MPH CRUISE	71 dBA	70 dBA	69 dBA	69 dBA	70 dBA

*C/Dest. †Stability-control inhibited.

roads. It wanders wherever the pavement guides it and is easily pushed around by the wind. The brake pedal is soft enough to be disconcerting even in slow-moving city traffic, and the highway-cruising experience is the loudest in this group.

You pilot the Q3 from a strange, city-bus driving position, with a high seat, a low cowl, and a steering wheel that projects upward from the dash as much as it does outward. Several drivers complained about not being able to move the wheel low enough to be comfortable. At least it's a decent suburban-family bus with a back seat that is reasonably comfortable.

The powertrain combo, with six forward gears and 200 horsepower, hits the right notes in refinement and shift quality. The all-wheel-drive system never allows any of the momentary torque steer or front wheel-spin that we occasionally witnessed in the Benz, the Infiniti, or the Lexus. However, the Audi powerplant's performance ranks at the back of the pack with its 7.8-second amble to 60 mph and 24-mpg thirst in our 600-mile drive.

The Q3 is an anomaly in Audi's current lineup. It's not particularly comfortable or gratifying to drive; the proportions are awkward, and the interior appears old and cluttered compared with



The QX30 is actually an attractive little thing. Unfortunately, the Infiniti has the test's worst ride quality and is tied with the Audi for least fun to drive.

the sleek, modern, technical cockpits we've come to expect from the folks in Ingolstadt.

4. INFINITI QX30

"That is an incredible piece of costumery," remarked senior editor and staff word inventor Jared Gall after unfolding himself from the QX30's cabin. It's an observation that cuts both ways; few QX30 buyers will ever realize they're driving the GLA's fraternal twin.

Thanks to Infiniti's heavily buffed design language—sheet-metal bulging and taut character lines showing the tension of seams about to burst—the QX30 looks like nothing else. Inside,

Infiniti invested in a new dashboard and adapted its own infotainment system, which should be enough to throw the uninformed off the scent. But the climate controls, window switches, and key fob are all lifted from the GLA. The steering wheel is different than the GLA250's, but only because it's an older Mercedes part.

The distinctions between the QX30 and the Mercedes it's based on are barely more than skin deep. Infiniti claims full responsibility for tuning the throttle, transmission, steering, and suspension. Yet back-to-back drives in the QX and the GLA suggest the Japanese were stymied when they attempted to better the Germans, who designed the vehicle from the ground up. The QX30's rear end trundles over rough pavement and the body lists in corners, meaning it both handles and rides worse than the vehicle that gave it life.

The transmission, which offers eco and sport modes, desperately needs a normal mode that shifts later but doesn't hold a lower-than-necessary gear indefinitely. Presumably, there is no such setting only because the shifter was already labeled



Infiniti QX30

[+] Well, it sure looks different, doesn't it?

[-] Worse ride and handling than the vehicle it's based on.

[=] A flawed GLA lacking the cachet of the silver star.

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Mercedes-Benz GLA250

[+] Sure-footed cornering, surprisingly quick.

[-] Cramped cabin, feels cheaper than it is.

[-] Space is a luxury that you apparently haven't paid for here.

with E, S, and M (for manual) to accommodate the AMG GLA45 for which it was originally designed. We averaged 25 mpg, 1 mpg less than the Mercedes, possibly because we frequently switched from the default eco mode to sport.

By outsourcing so much of the QX30's engineering to Mercedes-Benz, Infiniti directly tied the success or failure of its small crossover to the fate of the GLA250. We've mentioned the QX's shortcomings relative to the GLA, but, in the bigger picture, the Infiniti is intolerably cramped inside, the same chief weakness that plagues our third-place finisher.

3. MERCEDES-BENZ GLA250

With their four-door coupes and SUV coupes, the Germans have become masters of the niche. But despite an ability to foresee (or imagine) small markets for new ideas, they occasionally miss the obvious mass-market appeal of the conventional. The GLA is one

As with its platform-mate, the Infiniti QX30, the low, carlike Mercedes GLA is not convincing in its role as an SUV. Decent lifted hatchback, though.

such example. Mercedes' bizarre fusion of a compressed wagonlike body with a crossover's stance results in a roof that is almost five inches shorter than the Lexus's. Gall, at 6-foot-7, compared the Mercedes' claustrophobic interior to a sleeping bag. For normal-size humans, it's more like a two-person tent. Either way, we're comparing a \$42,000 vehicle to the indignities of camping.

Beyond lacking the basic amenities of headroom, adequate cargo capacity, and a usable rear seat, this particular GLA also lacked simple luxuries such as heated seats, a power passenger seat, and a proximity key. In many ways, it comes off as a marginally nicer Mazda 3, with materials nowhere near as upscale as what we expect from a Mercedes.

The GLA rides stiffly but not as clumsily as the Infiniti. Here, the ride penalty feels more like a conscious trade-off made for better-controlled body motions. (The Merc also rides on larger wheels with shorter tire sidewalls.) Light and accurate steering begets precise handling. The seven-speed dual-clutch gearbox engages smoothly from a stop and swaps ratios fluidly on both up- and downshifts. Its throttle response around town can be sluggish if your right foot is too light, but a launch-control program helps the GLA claim the quickest zero-to-60 run at 6.1 seconds. The Infiniti revs to the same 3200 rpm following similar launch-control procedures, but its engine bogs on the launch and its gearbox stumbles during the first upshift. For the QX30, it was quicker to just flat-foot the accelerator, hence the 60-mph time that's half a second slower.

Relative to the QX30, and even within the larger class, the GLA250 drives nicely, but it's hardly the complete package. A luxury utility vehicle needs to offer true luxury and utility. The GLA250 delivers neither.

2. LEXUS NX200T F SPORT

The only vehicle in this test with "sport" in its name is irrefutably the least athletic one. The Lexus NX200t lands a full tenth of a g behind the BMW X1 in cornering grip. Stops from 70 mph require a protracted 183 feet, an astounding 20 feet more



than the best-in-test QX30. And despite making the most power at 235 horses, the NX is the second slowest of this group. Dynamically, this F Sport has nothing in common with the Lexus IS350 F Sport that dethroned the long-reigning sports-sedan champ, the BMW 3-series.

The F Sport moniker never should have been applied to the NX200t in the first place, because this Lexus rises near the top of the class by virtue of the comfort and luxury it delivers, qualities that are absent in the third- through fifth-place contenders. From the stitched dashboard to the way the windows slow their roll in the final inch before sealing shut, the upscale touches are visible and tangible. The divine sport seats (which may be justification enough to opt for the F Sport) are generously bolstered and cushioned and the only seats in this test with adequate thigh support for taller drivers. The BMW's rear seat may be slightly bigger, but the NX's bench is better

Lexus NX200t F Sport

[+] Quiet, comfortable, luxurious.

[-] Performance well off the pace, distracting infotainment.

[=] More Lexus than F Sport.



The NX200t F Sport's hyper-aggressive, anime war-wagon styling is completely at odds with its compliant, comfortable compartment.



sculpted and padded, with plenty of room for two adults.

The NX's cockpit remains serene no matter how treacherous the road. The pillowy ride suggests the wheelbase measures longer than its 104.7 inches. While the rest of our convoy bobbed, bounced, and pogoed over expansion joints on what appeared to be a freshly paved stretch of I-75, the Lexus only conveyed its annoyance audibly, with the steady *thwap-thwap-thwap* of its tires. The boosted four-cylinder feels more linear than most, and the six-speed transmission is seamless enough for its changes to be invisible to the inattentive driver.

And an inattentive driver you will be, because Lexus has trumped all automakers in pilot distraction. The touch-sensitive track pad that controls the screen is one-quarter the size of other interfaces and mimics the sensation of trying to use a laptop in traffic. It's the one thing in this crossover that can raise your blood pressure.

1. BMW X1

The X1 cracks the small-luxe-crossover class with a package that's practical, comfortable, efficient, and upscale, with the added bonus of being fun to drive. There's a good reason why BMW ran away with the win and a 27-point margin in this test. It is the only automaker that has advanced to a second-generation vehicle in this segment. The latest X1 incorporates the lessons that

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INFINITI QX30 AWD
AUDI Q3 QUATTRO

Maximum points available

RANK	1	2	3	4	5
VEHICLE					
DRIVER COMFORT 10	8	9	7	7	6
ERGONOMICS 10	9	6	8	7	7
REAR-SEAT COMFORT 5	5	4	2	1	3
REAR-SEAT SPACE* 5	5	5	3	3	2
CARGO SPACE* 5	5	4	3	1	3
FEATURES/AMENITIES* 10	10	8	7	8	7
FIT AND FINISH 10	8	9	8	8	8
INTERIOR STYLING 10	9	7	7	7	7
EXTERIOR STYLING 10	6	6	7	7	7
REBATES/EXTRAS* 5	1	0	1	0	0
AS-TESTED PRICE* 20	18	18	20	19	19
SUBTOTAL 100	84	76	73	68	69
POWERTRAIN					
1/4-MILE ACCELERATION* 20	20	17	20	19	14
FLEXIBILITY* 5	3	4	2	4	4
FUEL ECONOMY* 10	10	7	9	8	7
ENGINE NVH 10	9	8	7	6	8
TRANSMISSION 10	9	8	7	6	8
SUBTOTAL 55	51	44	45	43	41
CHASSIS					
PERFORMANCE* 20	19	15	18	19	19
STEERING FEEL 10	8	8	7	6	6
BRAKE FEEL 10	9	7	7	7	5
HANDLING 10	9	7	7	6	7
RIDE 10	9	7	7	6	7
SUBTOTAL 60	54	46	46	44	44
EXPERIENCE					
FUN TO DRIVE 25	21	17	17	14	14
TOTAL 240	210	183	181	169	168

*These objective scores are calculated from the vehicle's dimensions, capacities, rebates and extras, and/or test results.



carry-on-sized boxes. You sit low in the BMW, as you do in the Infiniti and Mercedes, but the roof stretches high above your head to make this the roomiest of the bunch. Large panes of upright glass create a bright cabin with clear sightlines.

It's true that this new X1 has lost some of the handling prowess that stoked glossy memories of the E91-chassis 3-series wagon, the car that underpinned the original X1. That said, few companies do front-wheel-drive dynamics as well as Mini, which uses this platform in the Clubman. The most neutral handler here waltzed through the slalom and skidpad handling tests on the track and surprised us on back roads with lively turn-in behavior that never felt nervous on the highway. The Aisin transmission, an eight-speed unit for transverse-engine applications, shifts with the same readiness of that other eight-speed 'box that BMW uses to great effect, ZF's longitudinal transmission for rear-drivers. In conjunction with the 228-hp 2.0-liter four, it contributed to a 6.3-second hustle to 60 mph and the best observed fuel economy at 27 mpg.

Roomy, practical, handsome enough, efficient, comfortable, quick, and fun to drive, the X1 is easily the best-balanced small, luxury SUVish thing.

For BMW, the X1's first-place finish isn't just a victory, but also vindication of its decision to introduce this transverse-engine architecture. The X1 provides sensible packaging, upscale amenities, long-haul comfort, and a driving experience that outstrips anything else in this burgeoning class. 🇩🇪

Mercedes and Infiniti are just now starting to learn.

The original X1, available with rear-wheel drive and an inline-six, was low and wagonlike, with a cramped rear seat. The move to a front-drive architecture for the second iteration caused a lot of hand-wringing, but it makes a lot of sense for the people who buy and live with these vehicles. This new X1's back seat is a sprawling one, and it's the only one to slide fore and aft (a \$300 option) in this quintet. The BMW also swallowed the most packages in our new practical stowage test using airplane-

BMW X1

[+] Roomy and efficient with lively dynamics.

[-] Not as upscale as the Lexus.

[=] BMW can do front-drive-based dynamics well, too.



New Cars for 2017

The List

LOTUS

Evora 400: Last year in this space we said that Lotus's vacation from the U.S. market in 2015 might be an early indicator that it was leaving altogether. Then, with some relief, we went on to announce the fall 2015 on-sale date of the restyled and repowered 2016 Evora 400. The car never made it. Lotus promises us, however, that the \$93,785 Evora 400 will actually find its way to the U.S. this year. Adding credibility to the claim is an offer to drive the car before fall. Expect the same mid-mounted and supercharged 3.5-liter V-6, six-speed manual or automatic transmission, and a 2+2 seating configuration as in previous Evoras. The claimed 3138-pound curb weight (manual transmission) probably won't delight the ghost of Colin Chapman, but that's

relatively light by current standards. And coupled with 400 horsepower from the Toyota-sourced V-6, this Evora will be slow in only one way: coming to market.

MASERATI

Ghibli: The junior Maserati sedan gets a freshened interior that now includes a rotary control knob for the Chrysler Uconnect-based infotainment setup, which also gains Android Auto and Apple CarPlay compatibility. A Sport package includes Maserati's Skyhook adaptive suspension, steering-wheel shift paddles, 19-inch wheels, remote start (how sporty!), and a sport steering wheel and seats. The Luxury pack adds power-adjustable pedals, a foot-activated trunk release, upgraded leather upholstery, and some

niceties for rear-seat passengers. There also are a number of newly available interior and exterior carbon-fiber trim pieces.

Levante: Maserati's first SUV is here, and it's good. The basic \$73,250 Levante packs a twin-turbocharged 3.0-liter V-6 making 345 horsepower; the S model gets 424 horses from a similar engine. An eight-speed automatic is the only transmission. The suspension includes adaptive dampers and imbues this SUV with road manners and handling that come across as more sports sedan than off-roader. It veers toward too firm, in fact. But all is forgiven when you mat the throttle and discover how quick the Levante is and how snarly it can sound. Oh, and if you ever want to collect your gold bullion from the bank, this Maser will tow almost 6000 pounds.

Quattroporte: A refresh for 2017 aims to make this sedan more mainstream, with added sound-deadening materials and revised transmission programming for smoother shifts. The

twin-turbo V-6 and V-8 engines carry over. The QP also gets the same infotainment upgrades as the Ghibli, as well as similar option packages.

Unchanged: GranTurismo, GranTurismo convertible

MAZDA

CX-9: This complete overhaul of Mazda's three-row crossover arrived late in the 2016 model year. Like other Mazdas, it impresses with beautiful sheetmetal and first-rate interior materials, but the real action is behind the wheel. A curb weight slashed by more than 200 pounds helps the CX-9 in its goal to be the best-handling vehicle in its class. A 250-hp turbo four-cylinder is the only engine available, so the CX-9 certainly won't be the most powerful, but it does earn top EPA fuel-economy ratings. Prices start at \$32,420 and go deep into the \$40K range.

MX-5 Miata: see comparison test, page 066
The MX-5 RF joins the softtop roadster in the

MASERATI
LEVANTE



MERCEDES-BENZ
S550 CABRIOLET



lineup in early 2017. This new model is almost the Miata coupe that fans have been begging for since we were all in short pants. But it's not. The R stands for retractable and the F for fastback. Complainers will say it's a betrayal of the Miata's most basic tenet of simplicity. We maintain that when its Porsche Targa-like roof mechanism swivels and tucks itself behind the seats, it's undeniably worth watching. Plus it gives us new opportunities to say the word "butteresses."

Minor trim changes: 3, 6
Unchanged: CX-3, CX-5

MCLAREN

570GT: see first drive, page 108

570S Spider: A folding-hardtop convertible version of the 570S will arrive in 2017.

Unchanged: 570S, 650S/Spider

Dead: 675LT/Spider

MERCEDES-BENZ

AMG GT: The ends of the AMG sports-car lineup get filled out, with a new 456-hp base-model GT and the 577-horse GT R joining the already-on-sale 503-hp S. All are powered by versions of the same twin-turbo-charged 4.0-liter V-8. The base AMG GT arrives presently, while the 2018 AMG GT R won't be here until next summer.

C-class: An all-new coupe and convertible join the sedan, with the same three flavors of AMG to choose from including the C43 [see first drive, page 110] and the rear-drive, 4.0-liter twin-turbo V-8-powered C63 and C63 S, with 469 and 503 horsepower, respectively. Base C300 cars get 241-hp, 2.0-liter turbo fours, nine-speed automatics, and optional all-wheel drive. Sedan pricing starts at \$43,575. The C wagon remains stuck in Germany, unfortunately.

E-class: Completely redesigned for 2017, the midline Benz leads with the sedan; the coupes and convertibles carry over on the old platform for another model year. The E300 gets the same four-cylinder and nine-speed from the C-class, plus M-B's most advanced semi-autonomous driving tech. An E43 AMG sedan with a 396-hp twin-turbo V-6 and an E400 wagon that uses the same V-6 in 329-hp tune go on sale early in 2017, with other versions to follow next year, including an AMG E63.

G-class: Portal axles won't make the archaic Geländewagen SUV any more refined, but they will give the new G550 4x4² (yes, 4x4 squared) a towering 17.2 inches of ground clearance and assist it in fording more than three feet of water. The same 416-hp twin-turbo 4.0-liter V-8 that powers the standard G will also serve here when the 4x4² goes on sale early next year.

GLC-class: Last year's all-new compact crossover gets a coupe variant in early 2017, because, well, because BMW did the same thing with its compact ute. Thus, Mercedes' X4 clone will be available in two models: a 2.0-liter turbo four GLC300 coupe with 241 horses, or an AMG GLC43 coupe with 362 horsepower from a twin-turbo V-6. All-wheel drive is standard, as is a nine-speed automatic.

S-class: Non-AMG sedans get the nine-speed transmission, and there's a new "entry-level" Maybach S550. More significant is the 2017 arrival of a long-awaited S-class convertible. The four-place cabriolet has an acoustically insulated softtop that retracts or deploys at speeds up to 37 mph. Models are similar to the coupe's, with \$132,325 netting a rear-drive S550 and \$177,325 an all-wheel-drive AMG S63. At the top of the range is the rear-drive AMG S65, one of the most powerful

convertibles with a back seat ever produced, thanks to its 621-hp twin-turbo 6.0-liter V-12.

SL-class: The posh two-seater gets refreshed with a new front fascia. Four Botoxed models are available, each with twin turbos: the SL450 with a 362-hp 3.0-liter V-6, the SL550 with a 449-hp 4.7-liter V-8, the AMG SL63 with a 5.5-liter V-8, and the AMG SL65 with a 6.0-liter V-12.

SLC-class: Don't forget Mercedes' other retractable hardtop roadster. The car formerly known as SLK gets a new name and a new AMG SLC43 model with the ubiquitous twin-turbo 3.0-liter V-6 and nine-speed-automatic combo. New front and rear fascias and interior upgrades probably won't alter the SLC's position near the bottom of the company's sales chart.

Minor trim changes: CLA-, GLE-, GLS-class
Unchanged: B-, CLS-, GLA-class, Metris, Sprinter

MAZDA MX-5
MIATA RF





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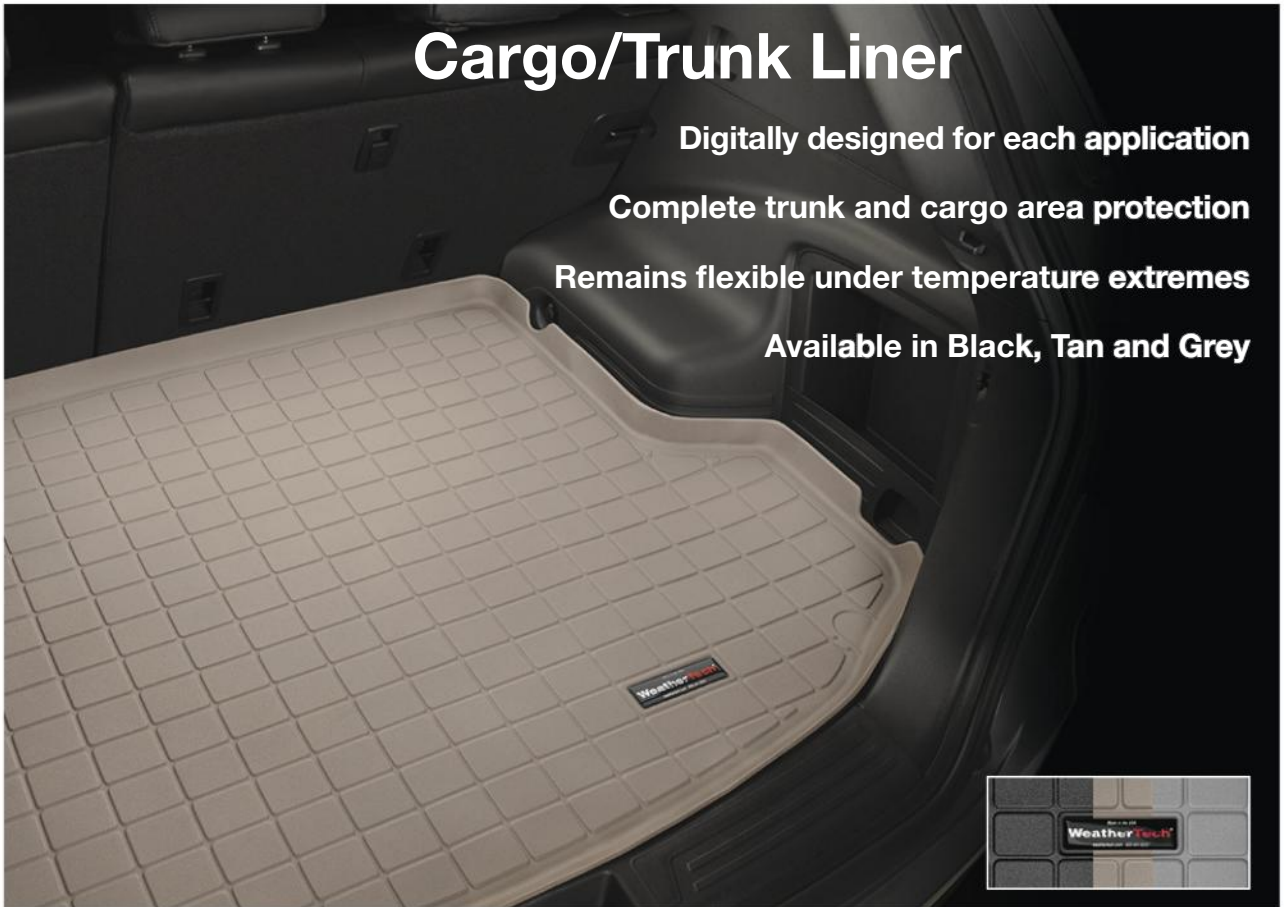
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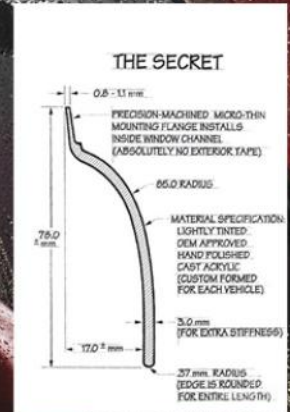
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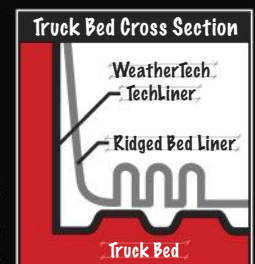
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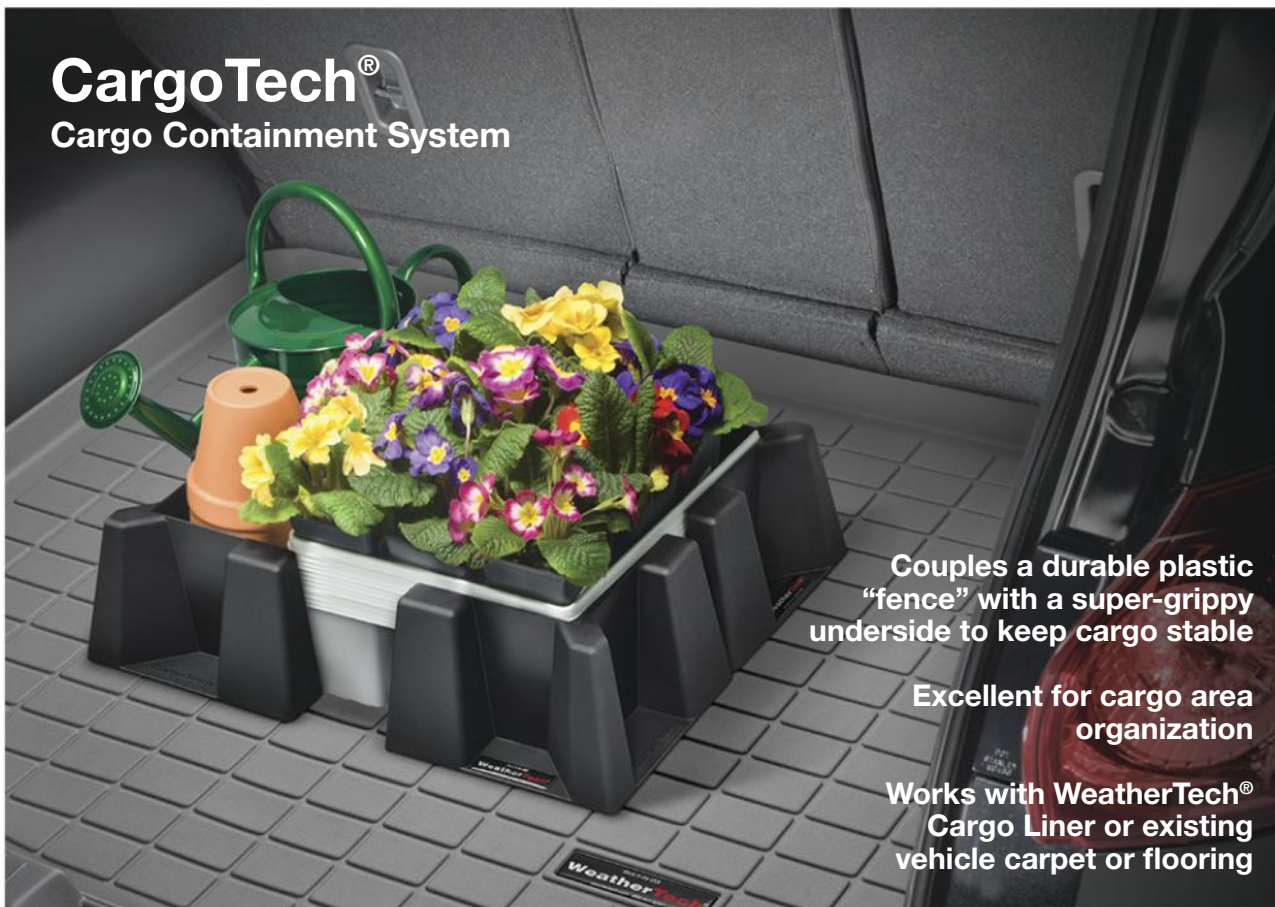
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McLaren, Rebooted

From the company with eight F1 constructors' championships comes a hatchback, the McLaren 570GT. *by Mike Duff*

First Drive

sumptuous leather and a well-stocked liquor cabinet in back, or maybe even a boomerang antenna if your brain, like ours, is permanently stuck in 1983. But the GT is indeed a more useful and comfortable version of the 570S Sports Series coupe, a car that already scores well on practical attributes compared with the pricier, angrier 650S, which is part of McLaren's so-called Super Series.

The obvious change is the arrival of a new hatchback. Its rear glass panel has a carbon-fiber frame that, in a thoughtful touch, is hinged on one side or the other, depending on whether the car is for a left- or right-hand-drive market, so it always opens for curbside access. Under the glass lies what McLaren calls the "Touring Deck," a leather-lined space with various S&M-grade black straps. In conjunction with the front trunk, the 570GT offers 13 cubic feet of luggage space, or two less than a Porsche Cayman.

Packaging the deck over the engine compartment raises concerns that anything entrusted to it will be broiled by the considerable heat generated by the twin-turbocharged 562-hp 3.8-liter V-8. Clearly anxious to allay such concerns, McLaren provided us with a posh basket packed with perishable foodstuffs that survived an 80-mile drive over some of the most spectacular roads on the Spanish island of Tenerife. All remained edible, even the truffles. We can sense your relief.

2017 McLaren 570GT

VEHICLE TYPE: mid-engine, rear-wheel-drive, 2-passenger, 2-door hatchback

BASE PRICE: \$201,450

ENGINE TYPE: twin-turbocharged and intercooled DOHC

32-valve V-8, aluminum block and heads, port fuel injection

DISPLACEMENT: 232 cu in, 3799 cc

POWER: 562 hp @ 7500 rpm

TORQUE: 443 lb-ft @ 5000 rpm

TRANSMISSION: 7-speed dual-clutch automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 105.1 in

LENGTH: 178.3 in

WIDTH: 75.1 in

HEIGHT: 47.3 in

PASSENGER VOLUME: 50 cu ft

CARGO VOLUME: 5/8 cu ft (front/rear)

CURB WEIGHT: 3350 lb

PERFORMANCE

(C/D EST)

ZERO TO 60 MPH: 2.9 sec

ZERO TO 100 MPH: 6.2 sec

1/4-MILE: 10.9 sec

TOP SPEED: 204 mph

FUEL ECONOMY

(C/D EST)

COMBINED/CITY/

HWY: 19/16/23 mpg



Yet the journey also demonstrated that the 570GT does not drive quite as differently from the 570S as we had been led to believe. Mechanical changes include softer springs with rates lowered by 15 percent in the front and 10 percent in the back, plus slightly slower steering. With the switch that controls the chassis left in normal, its softest position, the GT feels impressively compliant over rough surfaces. However, McLaren let us drive a 570S on the same roads, and it seemed to cope identically well. The revised steering is only evident in the slowest of hairpin bends, which require fractionally more wheel twirling to navigate.

You'd need a more sensitive tailbone than ours to sense a difference in performance. The 570GT weighs just 82 pounds more than the S, though McLaren's decision to fit the car we drove with carbon-ceramic brakes rather than the standard iron discs lessened the difference. Even though it's heavier, the GT still outaccelerates our hyperbole, with the most aggressive race mode motivating McLaren's "junior model" at a rate that makes you wonder why the 650S exists.

So the GT isn't a genuine alternative to grand tourers such as the Bentley Continental GT. Though the cabin is beautifully finished, and the standard glass roof makes it feel airier than the 570S, it's hard to clamber past the front-hinged doors—even with the Sport Series's low sills. It's a more practical, fractionally slower rendition of the Sports Series, and to our eyes a better-looking one as well, despite wearing a backpack. But it's not a radically new direction for the brand. And we're okay with that.

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Call it a Mercedes or a Mercedes-AMG or just an AMG. Regardless of moniker, the C43 is an exceptionally well-balanced luxury-performance road car.



Children of a Lesser God

Is the C43 a real AMG? Of course it is—the badge says so. —by Jeff Sabatini

First Drive

At the launch of the AMG C43 coupe and convertible, Mercedes dropped a bomb. Not that the AMG Sport line, introduced just last year, has been scuttled and the junior models elevated to full AMG status—that's a months-old post for Mercedes likers. So, too, is Benz's awkward admission that tucked in the nose of these new cars will be assembly-line sixes, mass-produced to blaspheme the AMG sacrament of "One Man, One Engine."

No, the real shocker was a triumphant promise that by year's end, the Mercedes-AMG family will have grown to 48 models, an impressive number of offspring even by the standards of fundamentalist cult leaders.

Mercedes has since clarified that we'll only be seeing 38 of those AMG models in the U.S., which is still a pretty crazy number for a luxury-performance subbrand. The spreading of AMG's seed will include many new models with mechanicals similar to those in the C43, which has a turbocharged 3.0-liter V-6 tuned to 362 horse-

power and 384 pound-feet of torque, paired with a nine-speed automatic and an all-wheel-drive system. With two extra gears and a greater rear-torque bias, it is not exactly the powertrain from last year's C450 AMG Sport sedan, which has also been rebadged a C43.

The transmission is the revelation here, shifting quickly and smartly, skipping multiple gears on downshifts before your brain can even count the number of hits to the steering-wheel-mounted paddles you'd have to make to match it. When the V-6 is at its 6000-rpm power peak and you're heavy on the throttle, the closeness of the ratios between fourth gear and the direct-drive sixth means you won't be spending enough time in any one cog to want to control the action yourself. Better to just leave it in drive and put your faith in the computer and Affalterbach's programmers.

[+] Sentient nine-speed transmission, ample power, great throttle response.
[-] Numb steering.

2017 Mercedes-AMG C43

VEHICLE TYPE: front-engine, all-wheel-drive, 4-passenger, 2-door coupe or convertible

BASE PRICE: \$59,000 (est)

ENGINE TYPE: twin-turbocharged and intercooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection

DISPLACEMENT: 183 cu in, 2996 cc

POWER: 362 hp @ 6000 rpm

TORQUE: 384 lb-ft @ 2000 rpm

TRANSMISSION: 9-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 111.8 in

LENGTH: 184.9 in

WIDTH: 71.3 in

HEIGHT: 55.3–55.4 in

PASSENGER VOLUME: 81/86 cu ft (convertible/coupe)

TRUNK VOLUME: 9/11 cu ft (convertible/coupe)

CURB WEIGHT: 4100–4150 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 4.6–4.7 sec

ZERO TO 100 MPH: 11.3–11.4 sec

1/4-MILE: 13.2–13.3 sec

TOP SPEED: 130 mph

FUEL ECONOMY (C/D EST)

EPA COMBINED/CITY/HWY: 24/21/29 mpg



The C43 offers five drive modes: eco, comfort, sport, sport-plus, and individual. The race mode from the C63 gets left out, but Mercedes has tuned each of the others to produce noticeable differences in ride quality and powertrain performance. Aside from the willfully deadened eco mode, throttle response is praiseworthy, with the transmission performing its sentient tricks as long as it's in sport or sport-plus. The adaptive suspension doesn't get truly AMG firm unless it's in sport-plus, where the tail end will even step out a little. The steering offers plenty of isolation from the road and more power assistance than necessary, at least until it, too, gets dialed up to sport-plus, where it's just heavy and numb. Compared with the C63, however, there's still some road feel.

And the power, that hallmark of AMGs past and present? The C43 won't deliver the overkill of the C63 of course, but even in the heavier, 4150-pound cabriolet, there's more than enough for street driving. And we don't expect to see many C43 convertibles at track days. Mercedes promises 4.7-second sprints to 60 mph and 4.6 for the coupe. Is that enough to make a C43 a "real" AMG? Absolutely. The C43 is an exceptional car for the real world and allows for rational justification as a daily driver. Let's not be zealots about badges, of all things.

DANIEL STEIGER

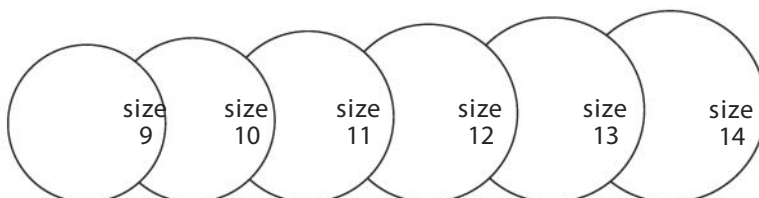
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New Cars for 2017

The List

MITSUBISHI MIRAGE G4

MINI

— **Countryman:** Expect an all-new version of this micro-ute in early 2017. Mini has yet to release details on the revised crossover, but it'll ride on the same platform as the Clubman and BMW X1, offer all-wheel drive, and feature Mini's modern range of three- and four-cylinder engines. Expect base Cooper and Cooper S trims to start, with the John Cooper Works spec to follow.

— **Minor trim changes:** Hardtop

Unchanged: Clubman, Convertible

Dead: Paceman

MITSUBISHI

— **Mirage:** A critical flop but a reasonable commercial success, the hatchback gumdrop gets an update for 2017 that brings lower aerodynamic drag, larger brakes, suspension changes, recalibrated power steering, and a slight power bump. A new four-door-sedan version, called the G4, rolls on a wheelbase 3.9 inches longer than the hatchback's.

Outlander plug-in hybrid:

To create an affordable plug-in-hybrid crossover, Mitsubishi piled in a 2.0-liter four-cylinder engine, a generator, an electric motor at each axle, and a 12-kWh lithium-ion battery pack mounted under the floor. There are three drive modes: pure electric, engine running to power the generator, and torque provided by the engine and both electric motors (every mode is all-wheel drive). When this Mitsubishi arrives at dealerships this fall, it should start around \$37,000.

Minor trim changes:

Lancer, Outlander, Outlander Sport

Unchanged: i-MiEV

NISSAN

— **Armada:** Redesigned after more than a decade of loyal if rather unexciting service, the plus-size Armada reemerges for 2017 based on the same global Patrol SUV platform that underpins the Infiniti QX80. The new Armada still uses body-on-frame construction, but the wheelbase of the standard eight-seater (seven seats are available in the Platinum trim) is down by 2.1 inches

to 121.1, while the overall length increases by 1.2 inches to 208.9. Double wishbones and twin-tube dampers sit at all four corners, and the body boasts a claimed 20-percent increase in torsional stiffness. Power comes from the same 390-hp 5.6-liter V-8 and seven-speed automatic transmission that make hay in the Titan pickup. Towing capacity is 8500 pounds. The revamped Armada is set to hit showrooms around the time you read this.

— **GT-R:** Featuring revamped front and rear fascias with a larger restyled grille to improve engine cooling and a reinforced hood with new creases designed to improve high-speed aerodynamic stability, the 2017 GT-R receives some of the most significant updates since it first arrived here for 2009. Revised ignition timing and more boost from the turbochargers pump up the twin-turbo V-6's peak output to 565 horsepower—a 20-hp increase over last year's non-NISMO car—while grunt is up 4 pound-feet to 467.

Pathfinder: Updates to Nissan's three-row crossover include new front and rear fascias, a stiffer suspension, and a new direct-injected 3.5-liter V-6 that makes 284 horsepower and 259 pound-feet of torque, increases of 24 and 19, respectively.

— **Rogue:** It's been a few years, three in fact, since the company's bread-and-butter small crossover got a reworking, so a mid-cycle exterior redo is due. Nissan isn't talking about it yet, but the restyle should happen sometime in the 2017 model year.

— **Sentra:** We expect that this mini-Altima will get a power boost to bring its output—currently 130 horsepower—up to the level of its main competitors in the C-segment. This infusion of power will likely come from a turbocharged engine, but it won't arrive until after the new year. Turbo lag, indeed.



Titan: Now that the semi-heavy-duty Titan XD has settled in, Nissan is rolling out the half-ton Titan pickup. While the exterior styling and 390-hp 5.6-liter V-8 engine will be shared with the "XD" model, the two will share little under the skin. The half-ton Titan's 139.8-inch wheelbase is nearly a foot shorter than the XD's, and its 228.1-inch length is nearly 15 inches shorter overall. It also will be 1.5 inches lower. Offered in single-, king-, and crew-cab configurations and 5.5-, 6.5-, and eight-foot bed lengths, the half-ton Titan will be available in S, SV, Pro-4X, SL, and Platinum Reserve trim levels. A V-6 engine should arrive sometime in late 2017.

—
Titan XD: Introduced as a 2016 model, the 5/8-ton XD arrived powered exclusively by a Cummins diesel V-8. Earlier this year, Nissan added a heavily revised version of its 5.6-liter gas V-8 to the lineup. That engine, which

also will see duty in the regular Titan, produces 390 horsepower and 401 pound-feet of torque and brings a maximum tow rating of 11,270 pounds, only 1044 less than the diesel.

—
Minor trim changes: 370Z Coupe/Roadster/NISMO

Unchanged: Altima, Frontier, Juke, Leaf, Maxima, Murano, NV200, NV2500/3500, Quest, Versa/Note

PORSCHE

—
Macan: In addition to the GTS trim level [see first drive, page 114], Porsche adds a new base model powered by a turbocharged 252-hp 2.0-liter four. All Macans receive recalibrated power steering said to enhance feel and on-center response. New safety features, including a rear-view camera and lane-departure warning, are now standard across the line.

Panamera: Porsche's four-door cruise missile might be all-new for 2017, but you'd not know it at a glance. Sure, the rear roofline slopes more steeply toward the decklid, a much-needed proportional tweak, but the Panamera's new shape doesn't differ significantly from the car it replaces. Its powertrains, however, are revised. Two models, 4S and Turbo, will be introduced first, and each will come with all-wheel drive and an eight-speed ZF dual-clutch automatic transmission. The 4S will offer a twin-turbo 2.9-liter V-6 good for 440 horsepower, up 20 from the current Panamera 4S's 3.0 twin-turbo V-6. A new twin-turbo 550-hp 4.0-liter V-8 will replace the Turbo's 4.8-liter mill. Prices will increase by \$1690 and \$5600 for the 4S and Turbo, respectively. Rumors of a 4.0-liter diesel V-8 persist, though the climate surrounding diesels in the United

States might well preclude its release. Additional powertrains, including an entry-level V-6 and a plug-in-hybrid model, are due later.

—
718 Boxster: Fully redesigned and powered by turbocharged four-cylinder engines, the 718 Boxster and Boxster S now yield 300 and 350 horsepower, respectively. What these Boxsters lack in high-rpm, flat-six shriek, their new engines deliver in apex-stomping torque. Indeed, for the first time in the car's history, you'll need to carefully meter the throttle at corner exit. Unlike many dedicated sports cars, the Boxster remains a genuinely usable street car that's as comfortable with uneven back roads as it is with L.A. freeways. Though its styling is fresh, it's also restrained. Dimensionally, the 718 Boxster is nearly identical to the outgoing car. Its power softtop neatly opens or closes in nine seconds.

718 Cayman: Still a Boxster with a fixed roof, the Cayman and Cayman S have changes that mirror those made to its Boxster brothers. Power, torque, dimensions, weight, and performance remain virtually identical between the cars.

—
911: If a new, naturally aspirated 911 is on your bucket list, Porsche sends its apologies; every variant of the 911 will be turbocharged for the 2017 model year. Fortunately, you'll still have choices, as Porsche will offer 14 versions of the rear-engine classic. Ten of those will be powered by the twin-turbocharged 3.0-liter flat-six producing either 370 (Carrera) or 420 horsepower (Carrera S). Bigger brakes and a new infotainment system are standard. The four remaining 911 models capitalize the "T" in Turbo. A 3.8-liter flat-six fed by two turbos pumps out 540 horsepower (580 in S trim). The 911 Turbo remains the world's most

livable junior supercar. Purists shouldn't lose heart over the 911's switch to enhanced aspiration; our sources reveal that we haven't seen the last of the naturally aspirated 911. The outgoing GT3 and GT3 RS were free-breathers, and while we mourn their loss, their replacements should also offer a high-rpm wail unfettered by turbo impellers. Those models, however, are years out.

—
Minor trim changes: Cayenne

Dead: Boxster Spyder, Cayman GT4, 911 GT3, 911 GT3 RS, 911 R [see first drive, page 116]

PORSCHE PANAMERA 4S



It might not look much different from current Macans, but the GTS is the best-driving version of the company's best-selling model line.



Family Function

Heightened reflexes make the 2017 Macan GTS drive like a proper Porsche. *—by Mike Sutton*

First Drive

It happened at Devil's Playground. It was there, among the tightest hairpins of the 156-turn Pikes Peak International Hill Climb course near Colorado Springs, Colorado, that the 2017 Porsche Macan GTS revealed itself to be the sharpest SUV in the four-strong Macan family. And yes, that includes the Turbo.

Slotting between the midrange S and the 400-hp Turbo, the \$68,250 GTS draws on more of Porsche's spirit but at a base price slightly less than a similarly equipped S model, which starts at \$55,450. The GTS transformation begins with the S model's twin-turbocharged 3.0-liter V-6, which gets stronger internals and revised tuning good for 360 horsepower and 369 pound-feet of torque—increases of 20 and 30, respectively. A standard sport exhaust gives a throaty warble when the butterflies in its quad exhaust pipes open, lending some character to the otherwise flat-sounding six. Using the optional Sport Chrono package to enable the seven-speed PDK transmission's launch-control capability, we expect the GTS to trail the Turbo's 4.2-second dash to 60 mph by a couple tenths.

Despite little action at lower revs, the GTS pulls more strongly than the Macan S in the meat of its powerband, tapering off near the 6000-rpm power peak. The dual-clutch gearbox, however, covers for the engine's shortness of breath by rapid-firing its ratios with near-telepathic acuity.

[+] Increased steering feel, vice-free handling, responsive transmission, excellent seats.
[–] A big price for a small SUV.

GTS boot camp also nets the previously numb Macan helm an updated power-steering system with a new electric-assist motor and revised tuning. While the changes don't replicate the delicate haptics and on-center feel of a 911, cornering loads and pavement imperfections now more succinctly inform the driver's fingertips.

The GTS's standard air suspension is adjustable for different ride heights and three levels of stiffness, with the default setup about 0.4 inch lower and 10 percent firmer than the S model's. Yet ride quality on the standard 20-inch wheels felt better than we remember from previous Macans (19s are a no-cost option but stepping up to 21s costs extra). Additional dynamic upgrades specific to the GTS include a stiffer rear anti-roll bar, greater rear bias within the active all-wheel-drive system, and retuned brake-based torque vectoring that lets the GTS rotate more readily than other Macans.

The GTS gets a brake upgrade, too. Larger 14.2-inch front brake rotors with six-piston calipers (single-piston 13.0-inches remain out back) are borrowed from the Turbo. They provided reassuring

2017 Porsche Macan GTS

VEHICLE TYPE: front-engine, all-wheel-drive, 5-passenger, 4-door hatchback
BASE PRICE: \$68,250
ENGINE TYPE: twin-turbocharged and inter-cooled DOHC 24-valve V-6, aluminum block and heads, direct fuel injection
DISPLACEMENT: 183 cu in, 2997 cc
POWER: 360 hp @ 6000 rpm
TORQUE: 369 lb-ft @ 1650 rpm
TRANSMISSION: 7-speed dual-clutch automatic with manual shifting mode
DIMENSIONS
WHEELBASE: 110.5 in
LENGTH: 184.7 in
WIDTH: 76.1 in
HEIGHT: 63.6 in
CARGO VOLUME: 18 cu ft
CURB WEIGHT: 4400 lb
PERFORMANCE (C/D EST)
ZERO TO 60 MPH: 4.4–4.5 sec
ZERO TO 100 MPH: 12.2–12.4 sec
1/4-MILE: 13.1–13.3 sec
TOP SPEED: 159 mph
FUEL ECONOMY
EPA COMBINED/CITY/HWY: 19/17/23 mpg



stopping power on the descent from the Pikes Peak summit, despite a softer pedal than we'd prefer.

Aided by a revised stability-control system, which includes a less-restrictive sport ESC mode on Sport Chrono-equipped models, the GTS's fortified chassis never felt flustered by the directional changes on our race to the clouds. In the GTS, understeer—the defining characteristic of most crossovers—feels more like a factor of the modest grip from the standard all-season tires than a lack of balance in its setup. Opting for the summer performance tires at no additional cost should tempt.

Standard front sport seats bring thickened side bolsters and excellent support. There's also plenty of brushed-aluminum trim, an optional GTS interior pack with red accents, and Porsche's latest PCM infotainment system with Apple CarPlay and available Wi-Fi connectivity. Porsche, of course, will happily customize countless details to your liking—for a price. But the standard GTS treatment is tastefully subdued with painted lower-body sections, black wheels, and gloss-and-matte-black accents.

Nearly \$70,000 before options is still awfully dear for a small lifted hatchback that's not as exciting to drive as a sports sedan offering similar space. The compromises inherent in any Porsche SUV still apply here. But in GTS form, the Macan now feels like a full-fledged member of the family.

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The Naked German

Stripped of unnecessary fluff and endowed with Porsche's most thrilling equipment, the 911 R is the best 911 you can't have. *—by Daniel Pund*

First Drive

Germans have long labored under the stereotype of being a little, well, buttoned-up, a little too serious. But, like all stereotypes, this one isn't a good predictor of individual behavior. Take, for example, our experience driving the 2016 Porsche 911 R in the hills around the company's Stuttgart headquarters.

We're bombing along a rural highway, marveling at the R's delicious exhaust note, when we notice, off to the right, a pasture filled with naked animals. While they appear to be sizable creatures, they are not, in fact, bovine. These are naked humans, bunches of them, reclining on chairs and blankets, basking in the Friday-afternoon sun. Given the hue of their skin, which closely mirrors the pure white of the Porsche we're driving, one would hope they are enjoying it responsibly, with great heaping amounts of sunblock.

The roads we are driving are also thick with motorcycles, as various Stuttgarters are looking to get an early start on the weekend. This is all to say that, in our experience, Germany is not just suits, ties, and people who refuse to turn on the air conditioning. These people are happily hanging out, literally and figuratively, having fun for the sake of it. And clearly Porsche was having fun with this stripped-down, devil-may-care version of the 911.

In fact, when the boss of Porsche's GT division, Andy Preuninger, talks about the R, he presents it as the automotive equivalent of a motorcycle. "It's a car just for a fun day," he says. "It's about

how good you feel in the car and not how fast you can go."

The 911 R is neither buttoned-up nor a particularly responsible car. It's not a long-distance tourer, as many versions of the 911 have become. It's loud. It vibrates. Oh, and it's manual only. It is as close to a purist's 911 as is possible these days and closer to Preuninger's heart than anything else he's worked on in his 15 years on the job.

We have a similar outlook. Even 911s with downsized turbocharged engines and dual-clutch automatics push our passion meter near the red zone. But a 911 with the naturally aspirated 500-hp 4.0-liter flat-six from the GT3 RS track car bolted into its ass, sending all that power through a not-available-on-the-GT3 six-speed manual transaxle? Now we're talking.

But before we open our hymnals and commence boisterous praise, there is one thing you need to know: You can't have a 911 R. No, not even if you can muster the \$185,950 base price. This 911 is not a new model line; it is a very special edition. It's

2016 Porsche 911 R

VEHICLE TYPE: rear-engine, rear-wheel-drive, 2-passenger, 2-door coupe

BASE PRICE: \$185,950

ENGINE TYPE: DOHC

24-valve flat-6, aluminum block and heads, direct fuel injection

DISPLACEMENT:

244 cu in, 3996 cc

POWER:

500 hp @ 8250 rpm

TORQUE:

339 lb-ft @ 6250 rpm

TRANSMISSION:

6-speed manual

DIMENSIONS

WHEELBASE: 97.4 in

LENGTH: 178.4 in

WIDTH: 72.9 in

HEIGHT: 50.2 in

PASSENGER VOLUME:

50 cu ft

CARGO VOLUME:

14 cu ft

CURB WEIGHT: 3050 lb

PERFORMANCE

(C/D EST)

ZERO TO 60 MPH:

3.5 sec

ZERO TO 100 MPH:

7.2 sec

1/4-MILE: 11.4 sec

TOP SPEED: 201 mph

FUEL ECONOMY

EPA COMBINED/CITY/

HWY: 16/14/20 mpg

constructed of steel, carbon fiber, and magnesium (among other less compelling ingredients), but once these materials are combined, it all becomes unobtainium.

A total of 991 examples of the R are being built, a nod to the current 911's generation code. If the price and limited production are not significant-enough barriers to purchase, consider that, at least in the U.S., existing 918 Spyder owners were given right of first refusal on the 911 R. Porsche won't say how many of these 300 people bought 911 Rs, only that some of the U.S. allotment of 300 cars made it to non-918 owners. Either way, they've all been sold.

Okay, that out of the way, let's waste no more time before declaring the 911 R fabulous. The R is a parts-bin car in the best possible way. It looks essentially like a 911 GT3/GT3 RS without the more obvious aero addenda. From the RS, the R gets a magnesium roof, carbon-fiber decklids, and carbon-fiber front fenders. According to Porsche, the R is the lightest of the current 911s, with a curb weight of 3021 pounds. It's wide and low, and its bulging fenders barely contain the delicate-looking 20-inch center-lock wheels. It wears sticky Michelin Pilot Sport Cup 2 tires (245 millimeters wide up front and 305 in the rear). Its engine is the same dry-sump 4.0-liter flat-six used in the RS, and it sounds, at its 8250-rpm power peak, like a Porsche Cup car. Its six-speed uses the same basic case as the seven-speed manual used in more modest 911s, but with reworked internals and no damn need for a fuel-saving seventh gear.

The cars we drove were equipped with a lighter single-mass flywheel (saving about 11 pounds over the standard dual-mass flywheel, but at an additional cost of \$3650). This has two immediately obvious benefits: The engine feels eager to zing through its rev range, and, at idle, it allows Western Diamondback levels of rattle, vibration, and buzz to radiate from the gearbox through the center tunnel of the car. Of course, this sort of rudeness would never be allowed in a standard 911. But in the R it feels like a statement of purpose and a rebuke of the robot-car tyranny.

Other special bits include standard carbon-ceramic brakes that also contribute the occasional squeal to the chorus of noises but provide fade-free, stand-on-the-nose stopping power. The car carries a clutch-type limited-slip differential, not any fancy electronically locking diff. Steering is by way of the same electrically boosted gears used in the GT cars but tuned for slightly lighter effort. Likewise, the suspension is

GT-spec stuff and uses the same spring rates and anti-roll bars. The dampers, however, carry a specific tune better suited to road driving than the GTs'.

Tuck your behind into the one-piece carbon-fiber seat (sized for modern adult humans, not race-car-driving waifs) and you'll notice that Porsche has also added a smear of nostalgia to the R. Those seats have vintage-Porsche Pepita houndstooth fabric inserts. The black-faced gauges carry light-green markings, a reference to old 911s. The interior is otherwise pretty standard 911, except for the absence of rear seats. And, if you somehow failed to notice, the car carries over-the-top red or green stripes and "PORSCHE" lettering along each flank to complete the retro vibe. Those stickers are optional. There are only two standard body colors, white or silver.

So, were you to forgo the stripes, the R is comparatively subtle. Instead of the big rear wing of the RS, the 911 R uses a special underbody rear diffuser, which is not visible at eye level, and a relatively small front splitter to bring some downforce to the equation. The exhaust note, while plenty loud at high rpm, includes no silly, programmed-in showboating pops and crackles on overrun.

We bombed around the area outside Stuttgart, alternating between berserk blasts of speed and slow trundles through town centers. And the R proved to be a perfectly pleasant and tractable road car. The ride quality, at least on fastidiously maintained German roads, was surprisingly supple. Thanks in part to its rear steering system, the R is unflappably stable. The shifter's short throws are sufficiently weighty without ever feeling resistant. Go ahead and rush your shifts.

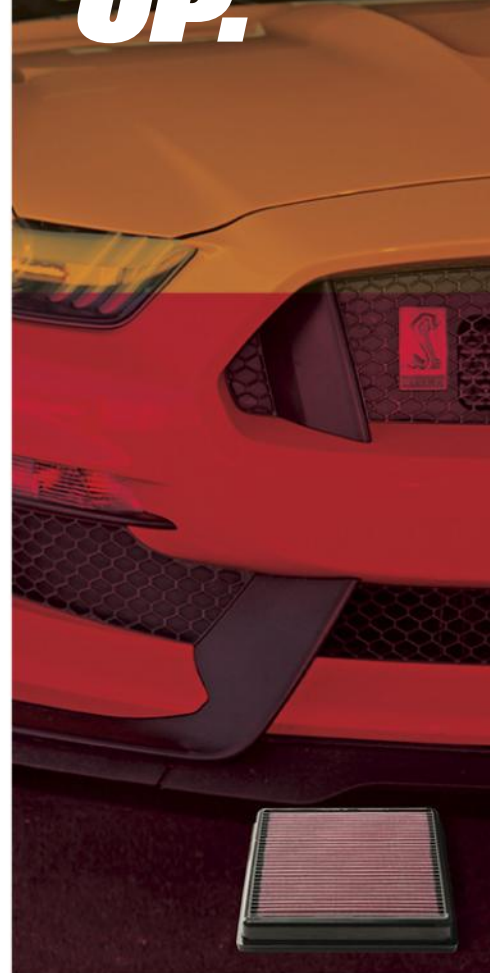
Rush them too much, though, or shift when your ears tell you that you should, and you will be short-shifting at something like 6000 rpm. Stay in it. There's little more satisfying than this engine wailing away at 8000 rpm, ripping a quick upshift, and climbing back up to its power peak. We guarantee you'll be going faster than you think you are. Throttle response is, well, perfect. It's never touchy. But the engine is alive and trembling with potential.

The R is an impressively neutral handler, too. You would have to try hard to generate understeer. But predictably, this is no tail-happy hoon-mobile, either. It just feels planted and forgiving.

The 911 R is spectacular to drive. It is a joyous thing. And it's proof that plenty of Germans know how to hang it all out there and just have a good time.

[+] Brakes, transmission, suspension, engine, steering, etc.
[-] We don't own one, and never, ever will.

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WHITELINE

New Cars for 2017

The List

RAM

2500/3500 Heavy Duty:

The big-dog 2500 Power Wagon adopts the 1500 Rebel model's see-it-from-space "RAM" grille, plus new wheels, blacked-out trim, and bold bed graphics inspired by its predecessors from the 1970s. Also added: a sturdier rear axle with larger-diameter shafts. Trim changes dot the rest of the Heavy Duty lineup, the most significant being a new Off-Road package with hill-descent control, Bilstein shocks, a limited-slip differential, and fender flares.

Unchanged: ProMaster, ProMaster City, 1500

ROLLS-ROYCE

Minor trim changes:

Dawn, Ghost, Wraith

Dead: Phantom (returning as an '18), Phantom Coupé, Phantom Drophead Coupé

SMART

Fortwo coupe: A Brabus package, available on both the coupe and convertible, adds a lowered and stiffened suspension, plus special wheels and trim.

Fortwo cabriolet: You can't call it a droptop. How about electric sliding top? Whatever your preferred terminology, it's back after a one-year hiatus, with an electrically operated top supported by manually removable roof rails. Like the coupe, it has an 89-hp 0.9-liter turbo three-cylinder and either a five-speed manual or a six-speed dual-clutch auto.

Fortwo ED: Smart is sitting on details until later in the year—no doubt to forestall riots at dealerships—but the Smart Electric Drive will rejoin the lineup soon. Expect a range beyond the 50 or so miles of the last car, but don't expect much else.

SUBARU

BRZ: Subaru's rear-drive sports coupe (and Toyota 86 doppelgänger) gets a nip and tuck for 2017. Changes include LED headlights and taillights, fresh 10-spoke wheels, and a new aluminum rear wing. But it's not just window dressing; Subaru has treated the BRZ's 2.0-liter flat-four to new heads, valves, and cams, along with redesigned intake and exhaust manifolds. All this work, however, results in a meager output boost from last year. The engine squeezes out 205 horsepower and 156 pound-feet of torque. Well, it does when it's bolted to the six-speed manual transmission. Opt for the six-speed auto and you get the same output as in years past: 200 horsepower and 151 pound-feet

of torque. Manual cars also get a slightly shorter final-drive ratio (from 4.10:1 to 4.30:1) for peppier acceleration. Subaru has also stiffened the coupe's structure, and added revised springs, dampers, and a fatter rear anti-roll bar. Further, the company has added a new Performance package (for Limited models with manual transmissions) that includes Brembo brake calipers, Sachs dampers, and larger front and rear brake rotors. What it all means: If you get a manual BRZ, Subaru likes you more than if you get one with an automatic.

Forester: All versions of Subaru's tall boy add more underfloor insulation, thicker side glass, and improved door seals to reduce unwanted noise. A new grille and headlight design headline the minor exterior

SUBARU IMPREZA

SMART FORTWO COUPE BRABUS EDITION



updates, and a quicker steering ratio should make this quasi-SUV a bit more responsive than before. And Foresters with the base 2.5-liter flat-four see a 2-mpg improvement in city fuel economy. The company's driver-assist technology suite, called EyeSight, includes lane-keeping assist and, in some versions, reverse automatic braking to help drivers not run over/into things.

Impreza: All-new for 2017, the slightly longer and lower Impreza is the first Subaru to ride on the company's new Global Platform. Still available in either four-door-sedan or four-door-hatchback body styles, the new Impreza will, of course, come standard with all-wheel drive. The new car's suspension system is the same configuration as the outgoing car's: struts up front and dual control arms out back. But Subaru claims an improvement in roll resistance, stability, and ride quality. Subaru has dropped the five-speed manual that once was available on Imprezas; now the only transmission is a CVT automatic with seven set ratios for when you would like to use the steering-wheel-mounted paddle shifters to pretend you are driving a conventional geared transmission. The familiar 2.0-liter flat-four gets direct injection and a slight power boost (152 horsepower versus last year's 148). For those who don't want to wait for the eventual WRX version, Subaru offers a 2.0i Sport model with a firmer suspension and 18-inch wheels. And

while it might crib a few lines from the vehicles produced by its Japanese competitors, the new Impreza is actually quite a handsome car. And that's definitely new.

Minor trim changes: Crosstrek, Legacy, Outback, WRX, WRX STI

TESLA

Model S: Earlier this year, Tesla surprised some buyers of its base Model S 70 by revealing that it had actually installed larger 75-kWh batteries in its cars. But there was a catch: Owners could access the extra capacity only after paying \$3000 for an over-the-air software update. This "in-app purchase" model has since been applied to the 2017 315-hp rear-drive Model S 60 and 328-hp all-wheel-drive S 60D, which start at \$67,200 and \$72,200, respectively. Both cars harbor a 75-kWh battery but are software limited to allow only a 60-kWh capacity; unlocking full battery energy runs \$9000. At the other end of the pricing spectrum, the 417-hp Model S 90D (\$90,700) and 463-hp

P90D (\$110,700) pack larger batteries than last year's top models, and the P90D's \$10,000 Ludicrous Speed option offers 532 horsepower. Tesla now includes a "summon" feature, which allows the Model S to park and unpark itself, sans driver. Other updates include interior upgrades, a new grille-free front-fascia design that resembles the forthcoming Model 3's, and a standard 48-amp onboard charger.

Model X: Introduced in the fall of 2015, the Model X is a two- or three-row crossover that can seat five, six, or seven passengers, depending on configuration. Base price for the 75D is \$84,200, the 90D is \$96,700, and the top-of-the-line P90D starts at \$116,700. As in the Model S, there's a \$10,000 upcharge for Ludicrous Speed, available only on the P90D. While the Model X shares most of its hardware with the Model S, two of the crossover's signature features have proven troublesome: Tesla has updated firmware to address owner complaints concerning the rear "Falcon Wing" doors and is handing out free sunshades to help

address thermal issues with the vehicle's expansive windshield, which extends over the front passengers' heads. The company forgoes annual model-year changes in favor of sporadic updates; given the Model X's buggy launch, expect more of those in 2017.

TOYOTA

Corolla: Toyota is celebrating its compact model's 50th anniversary in the most appropriately beige way possible, with an anodyne mid-cycle refresh. The old-feeling 1.8-liter four-cylinder engine stays—as do the standard manual and available four-speed (!) automatic and CVT—but the bumpers, grille, headlights, and taillights

are new. The 50th-anniversary special edition should find homes with folks who are easily up-sold at the dealership or entirely too excited by the Corolla's golden anniversary.

Highlander/hybrid: It's mid-cycle-refresh time for Toyota's mid-size SUV, too, bringing with it revised bumpers, headlights, and taillights, plus an SE trim level with a sport suspension and special wheels and trim. Like many 2017 Toyotas, the Highlander and its hybrid variant gain the Toyota Safety Sense [see sidebar, page 124] bundle of active-safety technologies as standard equipment. Both models swap their port-injected V-6s for the same port- and direct-injected 3.5-liter V-6 that made its debut

Ashes of Scion: In case you missed the not-so-thrilling conclusion to Toyota's experiment in wooing younger buyers, it's over. Scion was shuttered after failing to attract young, or indeed very many other, customers. Scion will donate three models to Toyota's lineup for 2017: the FR-S sports car, the iA sedan, and the iM wagon. They have been rechristened, respectively, the 86, the Yaris iA, and the Corolla iM. The latter two are unchanged beyond their badges. The 86, on the other hand, receives a mild cosmetic update as well as new suspension tuning, a stiffer body shell, and (on manual-transmission models) a 5-hp bump and a shorter final-drive ratio. Just like its twin, the Subaru BRZ.

TOYOTA 86



New Cars for 2017

The List

last year in the latest Tacoma pickup. The nonhybrid also trades its six-speed automatic for an eight-speed unit.

Prius Prime: The plug-in version of the latest Prius gets a name change to Prius Prime and a significant increase in battery capacity for more electric-only driving range. And unlike the last Prius plug-in, the Prime gets its own front- and rear-end designs. As with the current Prius, it is still weird-looking,

but at least it's a more coherent kind of weird. With an 8.8-kWh lithium-ion battery pack in place of the last Prius plug-in's 4.4-kWh unit, the Prime is rated for 22 miles of electric range at up to 84 mph before reverting to hybrid gas-electric power.

Sienna: Here, too, Toyota swaps its old 3.5-liter V-6 engine and six-speed automatic transmission for its latest 3.5-liter six and eight-speed automatic.

Toyota Safety Sense: Last year, after pledging to make advanced collision avoidance available at a low cost on most of its products, Toyota, along with 19 other automakers, agreed to make automatic emergency braking standard across its lineup by 2020. After introducing its radar- and camera-based TSS-P suite—which includes collision warning, automatic emergency braking with pedestrian detection, lane-departure warning with lane-keeping assist, automatic high-beams, and adaptive cruise control—on the Avalon and RAV4, Toyota is making the kit standard on the 2017 Avalon, Avalon hybrid, Corolla, Highlander, Highlander hybrid, RAV4, and RAV4 hybrid. Even the entry-level Yaris hatchback gets in on the action with standard TSS-C, a simpler setup that has auto emergency braking but lacks lane-keeping assist, adaptive cruise control, and the ability to detect pedestrians.

Minor trim changes: Prius C, Tacoma, Yaris, 4Runner

Unchanged: Avalon/hybrid, Camry/hybrid, Land Cruiser, Mirai, Prius, Prius V, RAV4/hybrid, Sequoia, Tundra

VOLKSWAGEN

Beetle: When it unveiled the Beetle Pink Color Edition concept at the 2015 New York auto show, Volkswagen said it was measuring public opinion. Well, the public must have been tickled by the idea because the #PinkBeetle now joins the lineup. And yes, “#” is part of its name. We can only assume that VW would rather have people making fun of it for car names with hashtags than eviscerating it for Dieselgate. It's available as a coupe or a convertible. A 170-hp turbo-charged 1.8-liter four with an automatic is the sole powertrain. Oh, and it's pink and has pink bits inside, because, #PinkBeetle is pink. In other Beetle news, the Classic

returns with 17-inch wheels that emulate the look of hubcaps, checked-cloth seating surfaces, and a palette of retro colors. Standard equipment includes a six-speed automatic with shift paddles and VW's Discover Media infotainment system with navigation. A rear spoiler and a leather-wrapped hand-brake lever and shift knob also come aboard. Other Beetles get R-Line-style bumpers, and a Dune convertible joins the coupe.

Golf Alltrack/ SportWagen:

The Alltrack is a Golf SportWagen with the SUV-wannabe treatment—lower-body cladding, a slightly raised ride height, and standard all-wheel drive. VW's 4MOTION system has a Haldex coupling that can send up to half of the 1.8-liter turbo four's 199 pound-feet of torque to the rear axle. A six-speed dual-clutch automatic is the only transmission choice at launch; a six-speed stick will arrive later. Available



TOYOTA
PRIUS PRIME

in three trim levels, the Alltrack's equipment includes an off-road driving mode (which incorporates hill-descent control), available brown leatherette upholstery, silvery roof rails, and an Alltrack-specific grille. Wagon aficionados who are turned off by the SUV pretense now can get 4MOTION all-wheel drive on the regular Golf SportWagen as well (with manual or automatic transmissions).

— **GTI:** A GTI Sport, four-door only, slots between the S and the SE trims. It comes standard with 18-inch Nogaro wheels, bixenon headlamps, LED daytime running lights, keyless access, a push-button ignition, black mirror caps, and the Performance package (Golf R brakes, electronically controlled limited-slip differential, and a 10-hp power bump to 220). The Performance package is now standard on the SE and no longer available on the S. The S and SE can be optioned with a Driver Assistance

package, which brings forward-collision warning with automatic emergency braking, adaptive cruise control, blind-spot warning, and rear cross-traffic alert. Those items are now standard on the Autobahn trim; that model's Driver Assistance package adds lane-departure warning, Parking Steering Assistant, and automatic high-beams.

— **Jetta:** The lineup shrinks to three trim levels, all of which get more standard equipment. Most notable are adaptive cruise control and forward-collision warning with automatic emergency braking on the SEL. Blind-spot monitoring and rear cross-traffic alert are standard on SE and higher trims, as well as the GLI.

— **Mid-size SUV:** Volkswagen's long-awaited mid-size crossover, based on the Passat and built in Chattanooga, Tennessee, is promised to arrive next April. Presumably by that

time it will have a name. We expect that it will have three rows of seats and a choice of either a turbocharged four-cylinder or a 3.6-liter V-6.

— **Tiguan:** The new version, already on sale in Europe, doesn't arrive here until next summer as a 2018 model, so in the meantime VW's small SUV is just having its trim lines reshuffled.

— **Minor trim changes:** CC, e-Golf, Golf, Golf R, Passat, Touareg
Dead: Eos, Jetta hybrid

VOLVO

— **S60:** Volvo's purge of all non-four-cylinder engines from its lineup is complete with the dismissal of the 2.5-liter five-cylinder from the S60 T5 AWD, as well as other Volvo models. The whole S60 line, and indeed all of Volvo, is now dependent on a 2.0-liter turbo four-cylinder that

starts at 240 horsepower in the base S60 and, with a supercharger joining its turbocharger for breathing duty, rises as high as 362 horsepower in the Polestar go-fast models. The tweener is the T6 R-Design at 302 horses.

— **V60:** Polestar pokes Volvo's small wagon to 362 horsepower, as in the sedan.

— **S90: see first drive, page 126**

— **V90:** It's easier to find an honest politician than a big wagon these days, but Volvo's own Colony Park, the new V90, defies the market. Based on Volvo's range-topping S90 sedan, this mother of all family travelers comes as a 250-hp T5 or 316-hp T6, each using a turbocharged 2.0-liter four-cylinder, the latter with an additional supercharger. A nine-inch touchscreen is at the center of a Swedish-clean cabin swaddled in wood and leather, and all-wheel drive is an option on the T6. Expect a higher-riding V90 Cross Country to arrive next year as well. Your Connecticut country estate awaits.

XC60: As in the S60, the crossover dumps its 2.5-liter inline-five for the 2.0-liter turbo four, in this model ranging from 240 horsepower to 302 with a side of supercharger. Some trim juggling lets buyers simply one-stop-shop for Dynamic (sportier) or Inscription (more luxe) editions.

— **XC90:** Introduced for 2016, the handsome XC90 is available for 2017 in T8 Twin-Engine Plug-In Hybrid guise. It adds an 87-hp electric motor at the rear axle to join the 316-hp 2.0-liter turbo- and supercharged four, as well as a 46-hp electric motor between the engine and transmission. Total combined output: 400 horses and 472 pound-feet of torque, plus up to 13 miles of EV-only driving. The 5159-pound T8 hits 60 mph in 5.3 seconds. Our fuel economy was an unimpressive 19 MPGe when factoring in electric driving. Upcharge for the T8: \$18,300. Want to spend more? There will be a Polestar version of the hybrid with 421 horsepower and 502 pound-feet of torque.

— **Dead:** XC70

VOLKSWAGEN GOLF ALLTRACK



VOLVO V90



The S90's relatively low roof gives it a distinctively long-and-sleek look. Its roomy interior is clean and simple without ever feeling spartan.



Call It a Comeback

The big Volvo is sleek, sophisticated, and once again a player. *_by Csaba Csere*

First Drive

After Ford sold Volvo to Chinese automaker Geely in 2010, the Swedish brand's first order of business was to fashion a new product lineup that would update its aging fleet of vehicles and help it catch up to other luxury brands, which were surging. The impressive new XC90 three-row SUV was the first vehicle to emerge from this process last year. This S90 luxury sedan is the second new product of the Geely era.

The S90 is designed to do battle in a mid-size luxury-car class against a raft of fine products including the Audi A6, BMW 5-series, Cadillac CTS, Genesis G80, Jaguar XF, and Lexus GS.

At 195.4 inches long and riding on a 115.8-inch wheelbase, the S90 is smack in the middle of these cars in size. It's a bit wider and lower than most of them, though. The goal was to give this S90 a stylish look while retaining four-door-sedan functionality. That translates into a lower roofline, steeply raked windshield and rear glass, and a longer side-glass area than on the S80 it replaces.

Coupled with a shoulderline that runs the length of the car, a neatly sculpted hood, and finely developed surfacing on its side panels, the S90 is attractive in a typically understated Swedish way.

Underneath its sheetmetal, the S90 employs Volvo's SPA (Scalable Product Architecture) platform, which made its debut on the XC90. That means a transverse front-drive layout, with unequal-length control arms in the front suspension and a multilink layout

in the rear. Conventional dampers do duty all around, along with coil springs in front and a transverse composite leaf spring in the rear. However, an optional suspension adds air springs in the back and adjustable dampers.

Motivation comes from two versions of Volvo's Drive-E engine, a turbocharged 2.0-liter four-cylinder, which is coupled to an eight-speed automatic transmission. Entry-level T5 models have the less potent Drive-E, developing 250 horsepower and 258 pound-feet of torque and driving the front wheels, while the T6 has all-wheel drive and a more powerful version of this engine, with 316 ponies and 295 pound-feet.

The additional power comes mostly from a larger turbocharger that develops more boost at midrange and high rpm. Normally that would also come with greater turbo lag, but Volvo addresses this problem by fitting a supercharger. At low revs, the supercharger produces immediate boost and responsiveness, while the turbocharger does all the heavy lifting above 3500 rpm.

[+] Sleek, sophisticated styling, inside and out; comfy seats, front and rear.
[-] Odd steering.

This setup works pretty much as promised in the fully equipped T6 models we sampled. Floor the accelerator from a stop and the S90 moves out immediately and with decent authority for a four-cylinder.

The eight-speed automatic shifts smoothly, logically, and frequently to extract the best from the small engine. You

can significantly alter its behavior by using the S90's drive-mode selector. In the default comfort mode, gearchanges are unobtrusive and predictably timed. Select eco mode, and the transmission upshifts a bit earlier and the trans is noticeably less eager to kick down when you're toeing into the throttle. Pick sport mode and the opposite holds true, with the transmission upshifting at higher rpm, kicking down two gears with the slightest provocation, and taking into account cornering and braking behavior to minimize inconvenient shifts when you're driving aggressively on a winding road.

Although four-cylinder engines are becoming common in this class, most of the S90's competitors offer six- and even eight-cylinder alternatives. Not so in the S90, where performance will leave you disappointed if you want a zero-to-60-mph time that starts with a 4. The best the T6 is likely to be able to do is 5.1 seconds, according to our estimates. On the other hand, the T5 will get an EPA combined fuel-economy rating of 27 mpg; the T6 is rated at 25 mpg.

Moreover, while Volvo's engine might have only four cylinders, it's happy in its work. It idles smoothly and quietly, and we noticed only the occasional hint of a four-cylinder drone in normal driving. Push the car hard and the 2.0-liter sounds purposeful and harmonious as it shifts between 6000 rpm and the 6500-rpm redline. Credit effective active noise cancellation coming through the sound system for the lack of discordant notes. A slightly more assertive soundtrack is available by selecting sport mode.

It was hard to evaluate ride quality on the supersmooth Spanish roads we experienced, but body motions were well controlled and the S90 was comfortable, stable, and reassuring—even in rapid driving. Both wind and road noise were low. Unfortunately, the electrically assisted steering makes the S90 feel a bit ponderous; the effort builds quickly as the steering wheel is eased even slightly off-center. Volvo engineers contend that this pronounced self-centering enhances the driver's sense of straight-line stability, but other cars in its class achieve the same effect with a less overbearing feel.

The S90 also can steer itself, using the standard Pilot Assist function. This feature functions at speeds up to 80 mph in conjunction with the adaptive cruise control, and it works well on highways with clear lane markers. However, you can't remove your hands from the wheel for longer than 15 seconds, and the system can't keep up with sharp turns on winding roads.



2017 VOLVO S90

VEHICLE TYPE: front-engine, front- or all-wheel-drive, 5-passenger, 4-door sedan

BASE PRICE: \$47,945–\$57,245

ENGINES: turbocharged and intercooled DOHC 16-valve 2.0-liter inline-4, 250 hp, 258 lb-ft; turbocharged, supercharged, and intercooled DOHC 16-valve 2.0-liter inline-4, 316 hp, 295 lb-ft

TRANSMISSION: 8-speed automatic with manual shifting mode

DIMENSIONS

WHEELBASE: 115.8 in

LENGTH: 195.4 in

WIDTH: 74.0 in

HEIGHT: 56.8 in

PASSENGER VOLUME: 98 cu ft

TRUNK VOLUME: 14 cu ft

CURB WEIGHT: 4250–4500 lb

PERFORMANCE (C/D EST)

ZERO TO 60 MPH: 5.1–6.7 sec

ZERO TO 100 MPH: 15.0–16.2 sec

1/4-MILE: 14.1–15.3 sec

TOP SPEED: 140–155 mph

FUEL ECONOMY

EPA COMBINED/CITY/

HWY: 25–27/22–23/

31–34 mpg

Brake feel is excellent, with a reasonably firm pedal and no dead motion. Interestingly, the brake pedal responds a little more immediately in sport mode, although the feel remains progressive.

Inside, the S90 has a clean and uncluttered layout. The key element in this interior is the 9.0-inch, portrait-oriented LCD screen. It controls several of the usual functions, including the climate-control system. As a result, the number of buttons and knobs on the dashboard has been greatly reduced. This upright display works ideally for the navigation function, as it makes visible more of the map depicting the road ahead than does a landscape-oriented screen.

Volvo seats have a reputation for comfort and the S90's do not disappoint. In addition to their standard seat-cushion-length and side-bolster adjustments, the seats are well shaped and properly padded. The rear seats also are comfortable, and the spacious back quarters provide excellent headroom and legroom.

Base prices for the T5 and T6 versions range from \$47,945 to \$57,245. Standard equipment is generous; every S90 comes with Volvo's full portfolio of safety features, including the semi-autonomous-driving capability, plus a power sunroof, navigation, a proximity key, and LED headlights and taillights. An extensive options list lets you add more than \$10,000 to the price of even the top-of-the-line T6. Still, the prices are lower than the nosebleed levels of the German competition.

Next year, a T8 Twin Engine model will appear with the 400-hp plug-in-hybrid powertrain already offered in the XC90. A wagon model, the V90, will arrive around the same time.

More new Volvos sharing the S90's design themes and technologies are on the way. The brand promises that its entire range will be revamped by 2017, and Volvo will have the youngest product range in the industry. As for the S90, it's solid, comfortable, beautiful, and practical, and it should make Volvo a player in the mid-luxury segment for the first time in a long while.

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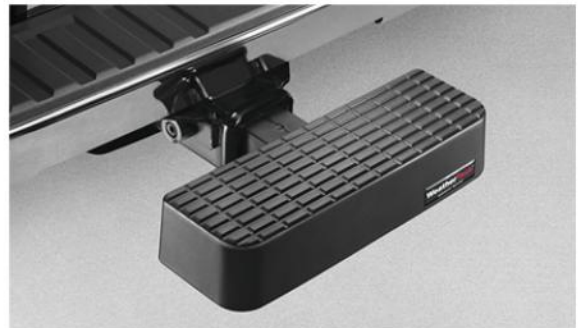
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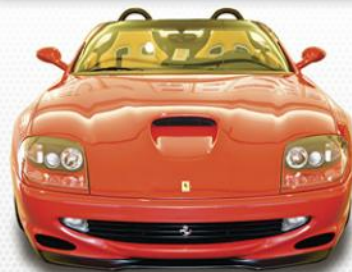


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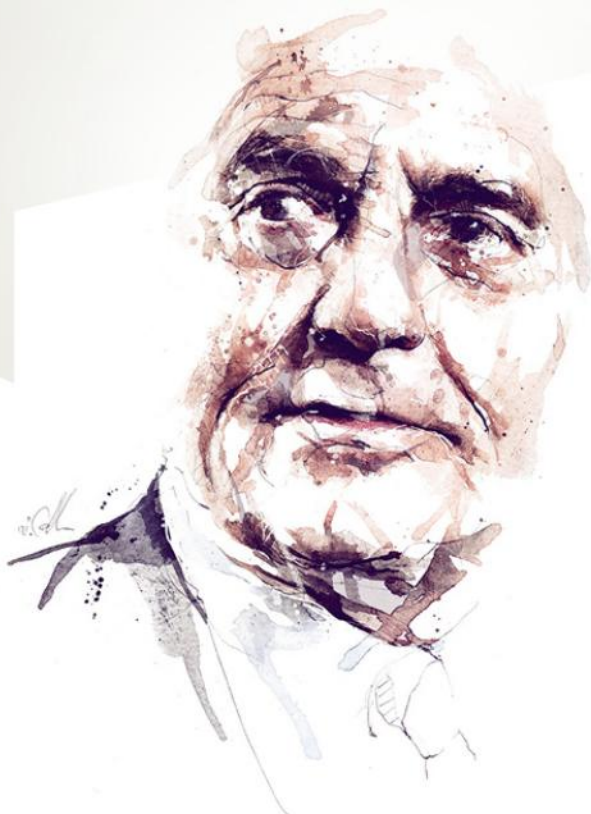
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What I'd Do Differently

Bob Lutz, 84

The former Major Dude at BMW, Ford, Chrysler, and GM chats about his life, his cars, and his beloved but “doomed” automotive industry.

► interview by JOHN PHILLIPS



C/D: Are you flying these days?

BL: Still fly my Aero Vodochody L-39 fighter/trainer and my MD-500E helicopter. I must be the oldest pilot in the world to still fly a tactical military aircraft.

C/D: What might save Lincoln?

BL: In the time left for the automobile as we know it, it won't be possible to make Lincoln a truly aspirational brand. The new Continental, while not as good as the concept, is a design language cribbed from Bentley. Which is fine, because if you're gonna steal, rob from a bank and not a grocery store. But cars don't matter much anymore—it's crossovers that count. Will Lincoln ever again inspire an image of superiority, where your friends say you bought a cool car just because they admire the brand? Probably not.

C/D: Will Tesla still exist 20 years from now?

BL: As it is presently, no. As they say, “Socialism is great until they run out of other people's money.” Tesla burns cash. It's not a car company, it's a cult of fanatics who think Elon Musk can do no wrong. But financially, it doesn't work.

C/D: What car are you most proud of?

BL: Everybody laughs, but the Volt—the most difficult to accomplish in a corporate environment. So much advanced engineering in a car we knew we'd sell at a loss.

C/D: Because automakers eat so much capital, will we eventually see only four or five remaining?

BL: It's likely. With autonomous cars, you're gonna see more consolidation. Once we have transport modules, you order off

the phone and brands won't matter anymore. When brands don't matter, the auto industry ends. It's got another 20 years.

C/D: How goes the VLF Destino supercar?

BL: We've started delivery. Carlos Santana has his, I have mine. We had no more than 25 people on the project, so I was gratified at the refinement we achieved. We'll produce 100 per year and sell them at former Fisker dealerships.

C/D: What's in your garage?

BL: The Destino. My dad's '52 Aston Martin DB2 Vantage, an Autokraft Cobra, a '34 LaSalle, a '62 Buick Skylark convertible, my Cunningham roadster, and a '71 Monteverdi 375 High Speed coupe.

C/D: What's to be done with Chrysler?

BL: De-emphasize the automobiles and find partners to concentrate on Ram and Jeep only. The amazing thing about Jeep is that no one thinks of it as an American brand—it's nationally neutral. A Jeep Grand Cherokee goes to owners of Audis and Benzes, where it's considered the family car. Those buyers wouldn't say that about a Ford Explorer or a Chevy Traverse.

C/D: Your greatest influence?

BL: The Marine Corps taught me commitment, courage, focus, and a value system that can easily suffice for people like me who aren't religious. Then, also, Lee Iacocca, who taught me leadership via a balance of force, intimidation, kindness, understanding, humor, and being fatherly. He told me I wasn't sufficiently humble, which I wasn't. After the famous TV ads featuring Lee, he became like Musk—people bought the cars because they thought Lee was a visionary.

C/D: What's your take on car companies competing in F1?

BL: Total waste of time. It provides nice outings for execs to visit hospitality suites, but it doesn't sway purchasing decisions. The percentage of the public that gives a damn is dwindling.

C/D: Is it possible that Ferdinand Piëch might be responsible for VW's Dieseldiegate?

BL: Yes. Employees have to be able to say to the CEO, “We figured it couldn't be done, but we tried our

best for you, and now we know it can't be done.” But with Piëch, if you failed, it was, “Off with their heads.” People who fear losing their jobs start lying.

C/D: What's the most important thing you learned in Europe?

BL: The overriding importance of product excellence. When I was at Ford of Europe and Opel, they were always gunning for best in class. Meanwhile, the mother ship in America's motto was, “We don't have to do good cars, just good enough.”

C/D: Of the Big Three you worked for, which was the most thorny?

BL: Ford, a very tight, finance-driven culture with everything quantified. Plus, there were elected execs and the Ford family, all meddling, yet we still had to serve the shareholders.

C/D: Anything you'd have done differently?

BL: I'd have paid more attention to my personal life and had fewer divorces. And I regret never being the CEO of a major auto company. If I'd not frequently treated Lee Iacocca with such disdain, I think there's a good chance I'd have been CEO at Chrysler. But I was sort of a smartass, and I'd take on Lee in big meetings. His message after that was “ABL”—Anybody But Lutz. ■

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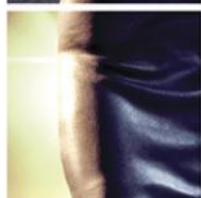
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CHEVROLET 

THE TALE OF THE 2016 SILVERADO MIDNIGHT EDITION

STRAIGHT FROM THE FOLKS WHO MADE IT

What does it take to make Silverado dependable and long-lasting? We sat down with the Chevrolet chief engineer behind the 2016 Silverado V8 to find out what makes the Chevy Small Block V8 so legendary.



JORDAN LEE

CHEVROLET GLOBAL CHIEF ENGINEER AND
PROGRAM MANAGER, SMALL BLOCK ENGINES

The Chevy Small Block V8 is legendary. Was it difficult to squeeze more improvements out of this new, fifth-generation version, the EcoTec3 V8?

When I was a younger engineer, I thought most of the big advancements in efficiency had been made, but I learned that there are still a lot of technologies and improvements to explore. For example, the fifth-generation Small Block engine has had significant improvements over the previous generations. Direct Injection, Variable Valve Timing and Active Fuel Management™ are technologies that are fundamental to its design. Direct Injection injects fuel directly into the cylinder. This aids in keeping the combustion chamber cool, which means it can tolerate a higher compression ratio for increased power. Variable Valve Timing improves the breathing efficiency of the engine so it can make more power and more torque.

Active Fuel Management deactivates four cylinders when the truck is under light loads, which translates to better fuel economy.¹ These three technologies – Direct Injection, Variable Valve Timing and Active Fuel Management – work very well together and collectively result in better performance and fuel economy. For example, Direct Injection and Variable Valve Timing combine to allow higher compression and better breathing efficiency. This means more power and allows the engine to stay in 4-cylinder mode longer, which means better fuel economy!¹ No other truck manufacturer is using all three of these engine technologies together. My team and I are very proud of how well these technologies complement each other in the real world. We're also proud of the fact that we can offer these technologies as standard equipment on every Silverado. The EcoTec3 V8 in the Silverado Midnight Edition is a great new chapter in the Chevy Small Block's legendary history.

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